

EXHIBIT G

1 OF 2



US006480855B1

(12) **United States Patent**
Siefert

(10) **Patent No.:** **US 6,480,855 B1**
(45) **Date of Patent:** **Nov. 12, 2002**

(54) **MANAGING A RESOURCE ON A NETWORK
WHERE EACH RESOURCE HAS AN
ASSOCIATED PROFILE WITH AN IMAGE**

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(US)

(73) Assignee: **NCR Corporation**, Dayton, OH (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/643,599**

(22) Filed: **Aug. 22, 2000**

Related U.S. Application Data

(63) Continuation of application No. 08/217,063, filed on Mar. 24, 1994.

(51) Int. Cl.⁷ **G06F 17/30**

(52) U.S. Cl. **707/10; 707/9; 705/27**

(58) Field of Search **707/9, 10; 717/11;
709/219, 220, 221, 203; 705/26-27**

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,757,037 A	*	9/1973	Bialek	178/18.01
4,547,851 A	*	10/1985	Kurland	186/38
5,155,847 A	*	10/1992	Kirouac et al.	709/221
5,166,886 A	*	11/1992	Molnar et al.	700/234
5,313,392 A	*	5/1994	Temma et al.	235/385
5,421,009 A	*	5/1995	Platt	709/221
5,473,772 A	*	12/1995	Halliwel	717/11
5,572,572 A	*	11/1996	Kawan et al.	379/90.01
5,615,342 A	*	3/1997	Johnson	705/24
5,845,090 A	*	12/1998	Collins, III et al.	709/221

OTHER PUBLICATIONS

"Harvest User's Manual" by Darren R. Hardy & Michael F. Schwartz, Version 1.0 Oct. 1994. Last revised on Nov. 3, 1994.

"Essence: A Resource Discovery System Based on Semantic File Indexing" by Darren R. Hardy & Michael F. Schwartz—University of Colorado, Boulder. 1993 Winter USENIX—Jan. 25–29, 1993—San Diego, CA pp. 361–374.
"Harvest Effective Use of Internet Information," The Harvest Information Discovery and Access System. No Date.
"The Harvest Information Discovery and Access System" by C. Mic Bowman, Peter B. Danzig, Darren R. Hardy, Ndi Manber & Michael F. Schwartz. No Month 1994.
Technical Discussion of the Harvest System. No Date.
Harvest Demonstration Brokers Feb. 1996.
Instructions for the Harvest distribution: Version 1.3 No Date.
Frequently Asked Questions (and Answers) about Harvest Version 1.4 patchlevel 2. 13 pages Feb. 1996.

(List continued on next page.)

Primary Examiner—Jack Choules

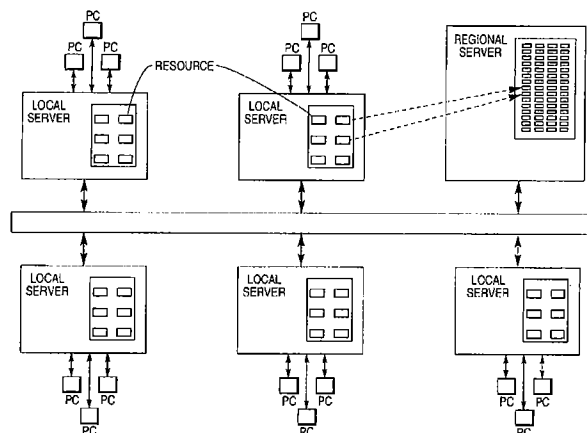
(74) *Attorney, Agent, or Firm*—Greg Wette

(57) **ABSTRACT**

The invention concerns a system for managing resources, which can take the form of (a) computer-compatible information, such as data files and programs, and (b) non-computer-compatible information, such as data contained on microfiche, and (c) physical objects. The resources are located at geographically diverse sites. The invention contains a descriptive profile for each resource, and allows any user to search all profiles, and to search the profiles according to "fields" (a database term), such as by location of the resources, or by category of the resources. The user can order delivery of a selected resource, and the system causes delivery of the resource to be executed, irrespective of the form (e.g., physical object) of the resource. The invention allows a provider of a new resource to limit access to the resource, by identifying users who are authorized to obtain access to the resource. Non-authorized users cannot obtain access to the profiles of these resources.

3 Claims, 101 Drawing Sheets

Microfiche Appendix Included
(3 Microfiche, 207 Pages)



US 6,480,855 B1

Page 2

OTHER PUBLICATIONS

- "Customized Information Extraction as A Basis for Resource Discovery," by Darren R. Hardy and Michael F. Schwartz, Department of Computer Science, University of Colorado, Boulder. Mar. 1994.
- "Debugging Autonomously Managed Distributed Systems & The Harvest Cache and Directory Replicator," by Peter B. Danzig Computer Science Department, University of Southern California, Nov. 2, 1994.
- Harvest: A Scalable, Customizable Discovery and Access System, IRTF-RD: Mic Bowman (co-PI, Transarc), Peter Danzig (co-PI, USC), Darren Hardy (PRA, U Colorado), Udi Manber (co-PI, U Arizona), Mike Schwartz (PI, U Colorado). No Month 1994.
- "Internet Resource Discovery Services," by Katia Obraczka, Peter B. Danzig and Shih-Hao Li, University of Southern California, 8153 Computer, 26 (1993) Sep., No. 9, Los Alamitos, CA, US.
- "The Internet Gopher: A Distributed Server Information System," by Mark Cahill, University of Minnesota. No Date.
- "The Internet Gopher Protocol a distributed document search and retrieval protocol" Network Working Group, Request for Comments: 1436. 15 pages. Mar. 1993.
- Exploring the Power of the Internet Gopher, UIUCnet V6-1, Jan. 1993.
- "The Whole Internet" User's Guide & Catalog, Second Edition, by Ed Krol 384.648, 161 Kr 1994.
- Internet Passport, Northwestnet's Guide To Our World Online, Mar. 1993, Fourth Edition. pp. 259-344.
- "Archie—An Electronic Directory Service for the Internet," by Alan Emtage, McGill University, Montreal, Canada, Peter Deutsch, McGill University, Montreal, Canada, USENIX—Winter '92.
- "Distributed Indexing A Scalable Mechanism for Distributed Information Retrieval," by Peter B. Danzig, Jongsuk Ahn, John Noll, Katia Obraczka, Computer Science Department, University of Southern California, Los Angeles, California. ACM SIGIR Conference 1991, pp. 220-229.
- "Internet Resource Discovery at the University of Colorado," by Michael F. Schwartz, Department of Computer Science, University of Colorado, Boulder Colorado, Oct. 1992.
- "Research Problems for Scalable Internet Resource Discovery," by C. Mic Bowman, Peter B. Danzig, Michael F. Schwartz, University of Colorado at Boulder, Technical Report CU-CS-643-93, Mar. 1993.
- "Fields of Files," by Ruth Halpern, LAN Technology, Sep. 1991, vol. 7, No. 9, pp. 48-62.
- "Test Drive—Inside the Document Den," by Ruth Halpern, Lan Magazine, Dec. 1992, vol. 7, No. 12, pp. 170-178.
- Automating Document Management, Office Administration and Automation, vol. XLVI, No. 4, Apr. 1985, pp. 51-86.
- "A Network Under Control," by Ed Perratore, Dec. 17, 1991, PC Magazine, pp. 287-330.
- "Evolution of the Internet Gopher," by Mark P. McCahill & Farhad X. Anklesaria, JUCS, vol. 1, Issue 4. 1995.
- Road Map to A/UX, Release 3.0. pp 1-1 through 1-21 No Date.
- Apple Inside Macintosh vol. III pp. III-9 through III-10 Nov. 1990.
- Brady "Inside the Apple Macintosh," by Jim Held & Peter Norton. pp 590-591 © 1989.
- Macintosh Bible, second edition, edited by Arthur Naiman. No Date.
- Claris for Macintosh, ClarisWorks User's Guide. p. 1-18, 1-19, and p. 2-1 through 2-10 No Date.
- Guide to Macintosh System 7.5, Don Crabb. © 1994.
- Macintosh User's Guide for desktop Macintosh computers, Part I-IV. © 1993.
- "The System 7 Book", by Craig Danuloff, Second Edition for 7.0 & 7.1. © 1994.
- "Desktop Design Series," the Ventana Press. © 1993.
- An Overview of A/UX Release 3.0, Chapters 1 & 2. No Date.
- Mastering Windows 3.1, Robert Corvart. © 1992.
- What Is Microsoft Workgroup Add-On for Windows? No Date.
- Microsoft Windows User's Guide Operating System Version 3.1. 1994.
- Concepts, Novell NetWare 4, Network Computing Products. No Date.

* cited by examiner

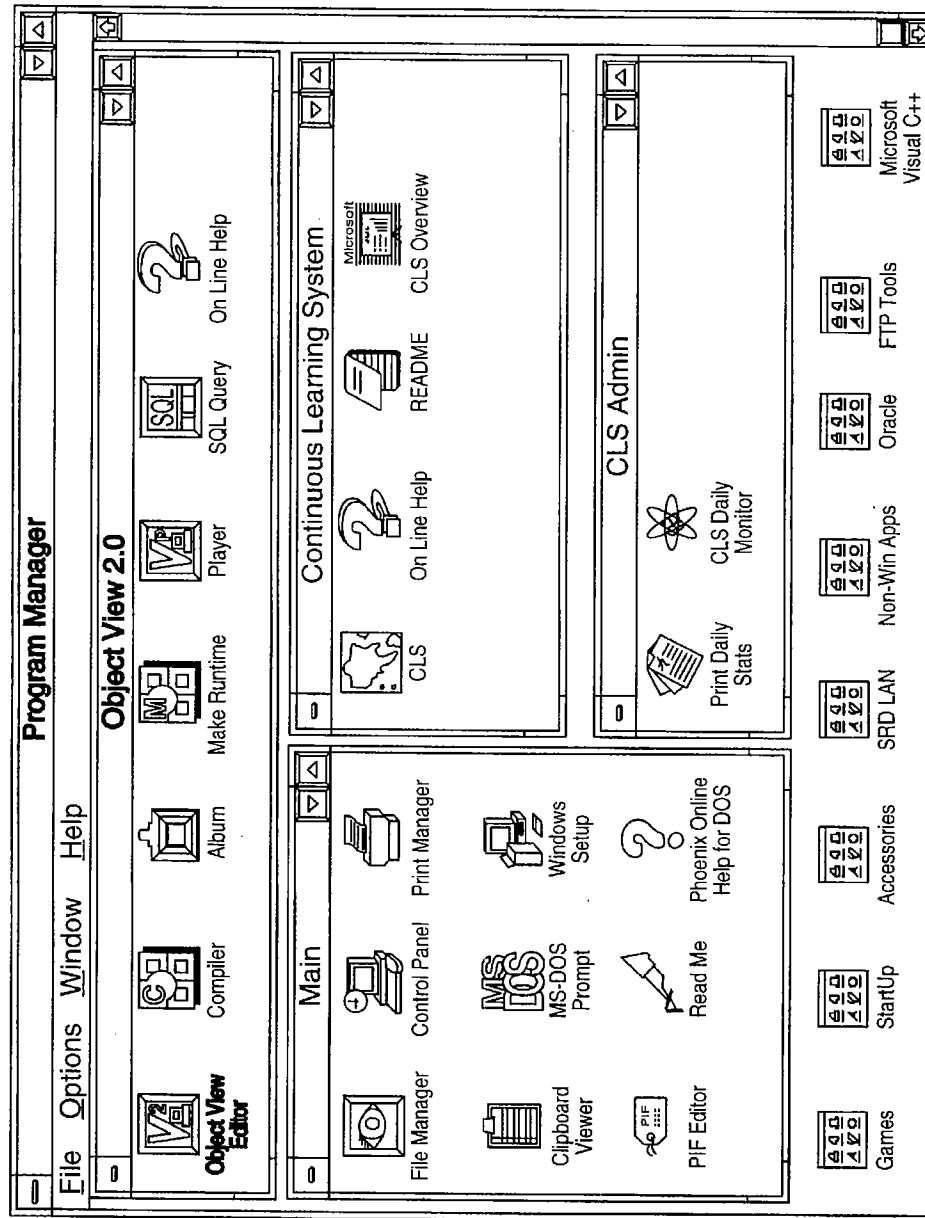
U.S. Patent

Nov. 12, 2002

Sheet 1 of 101

US 6,480,855 B1

FIG. 1

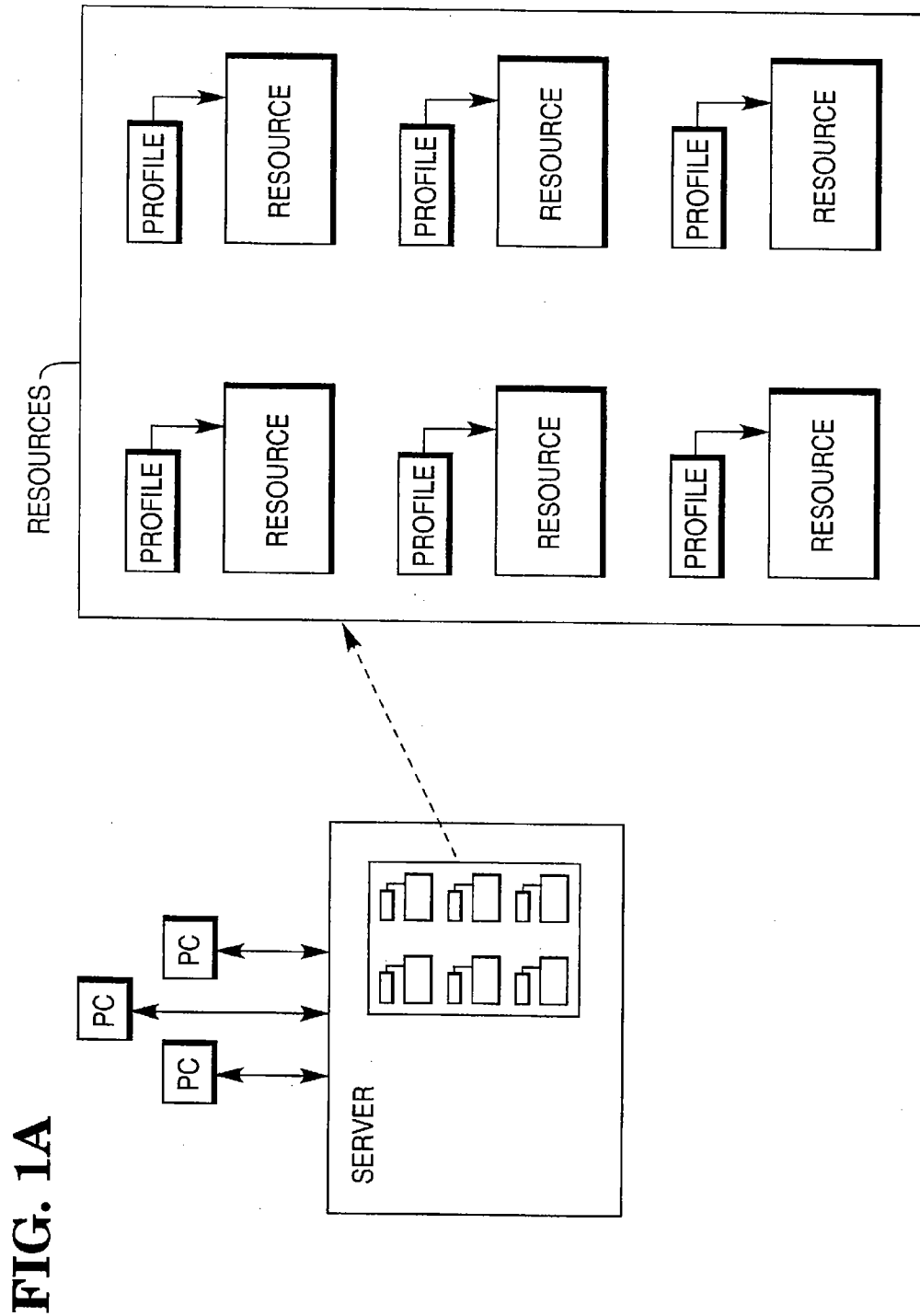


U.S. Patent

Nov. 12, 2002

Sheet 2 of 101

US 6,480,855 B1



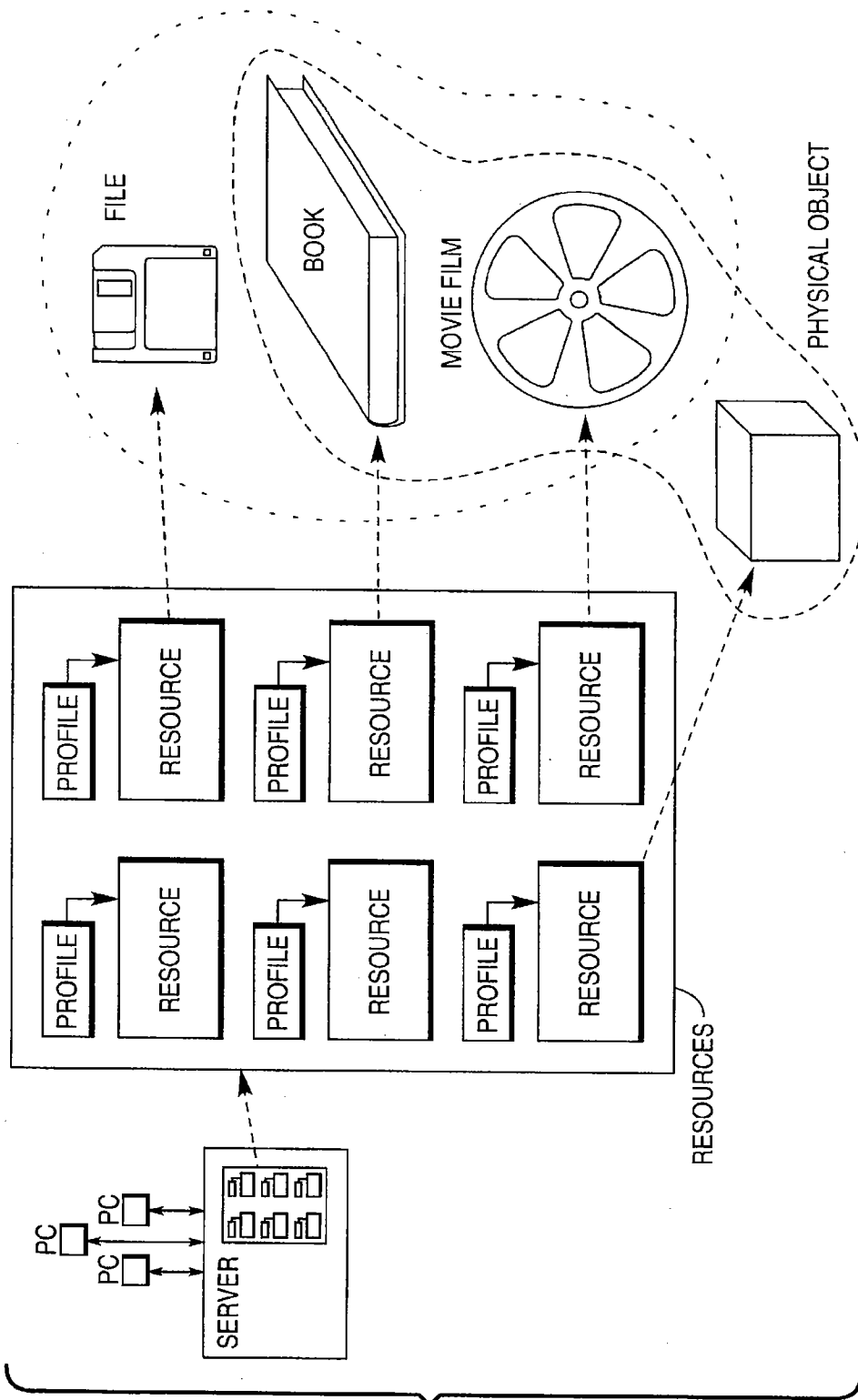
U.S. Patent

Nov. 12, 2002

Sheet 3 of 101

US 6,480,855 B1

FIG. 1B



U.S. Patent

Nov. 12, 2002

Sheet 4 of 101

US 6,480,855 B1

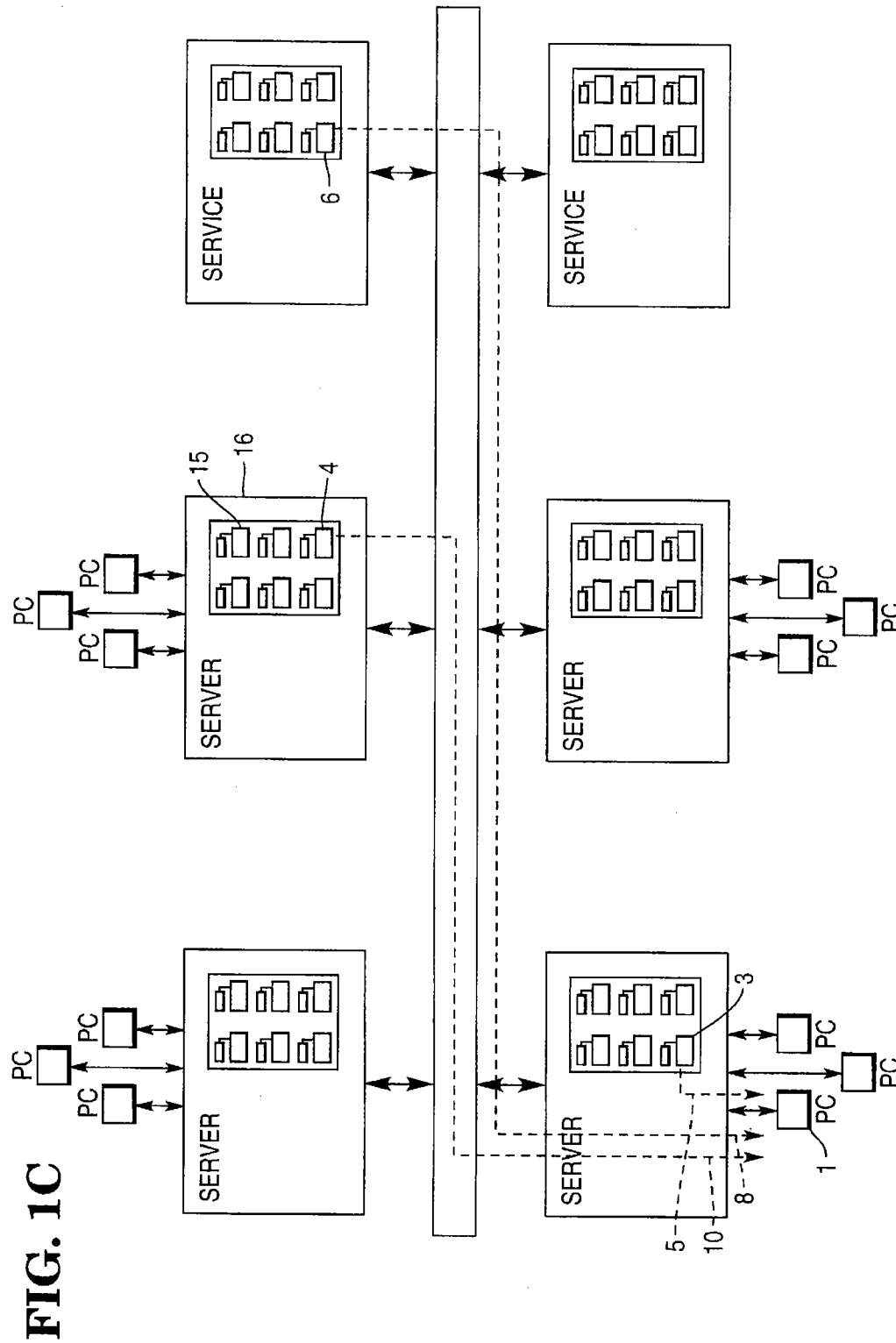
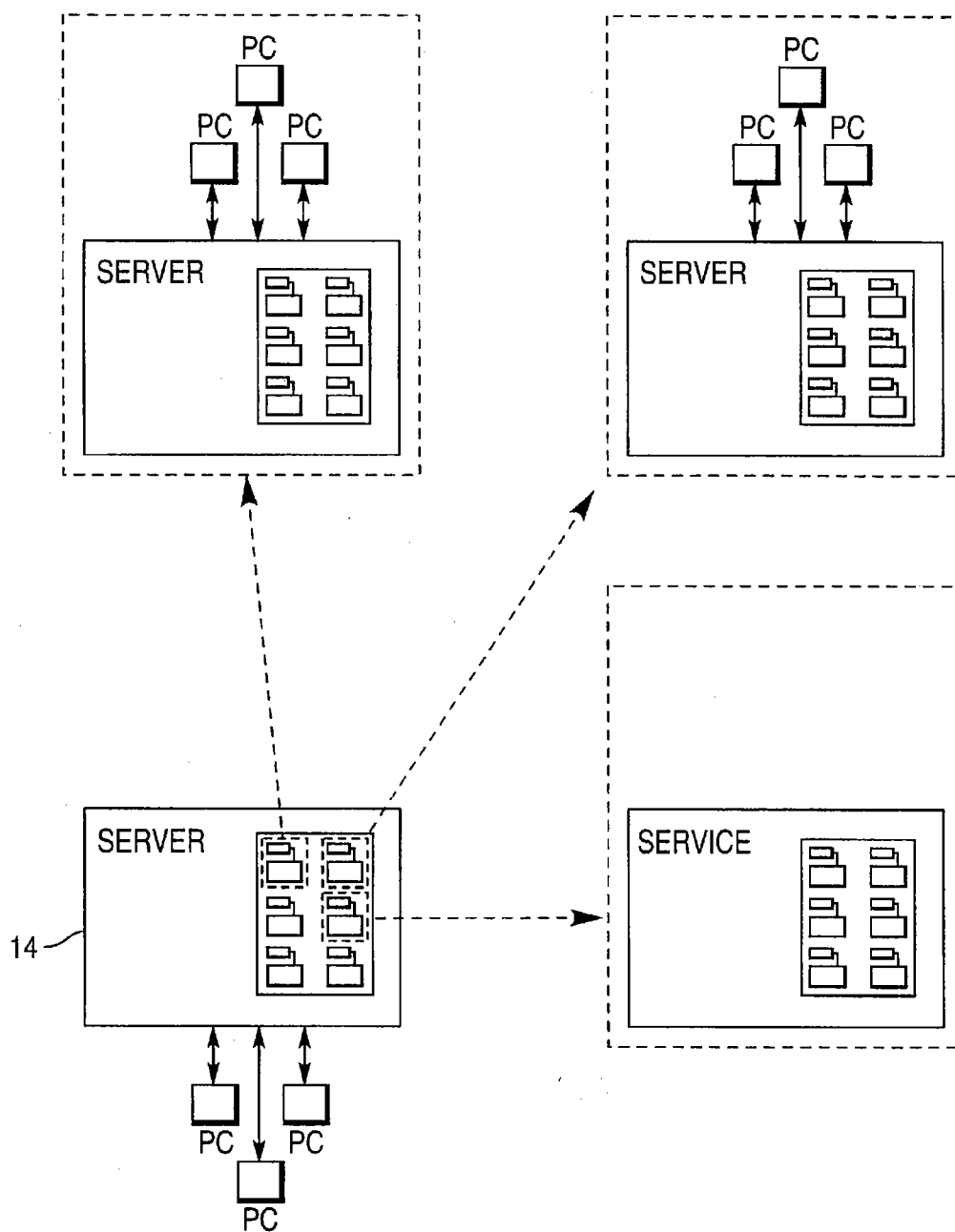


FIG. 1D

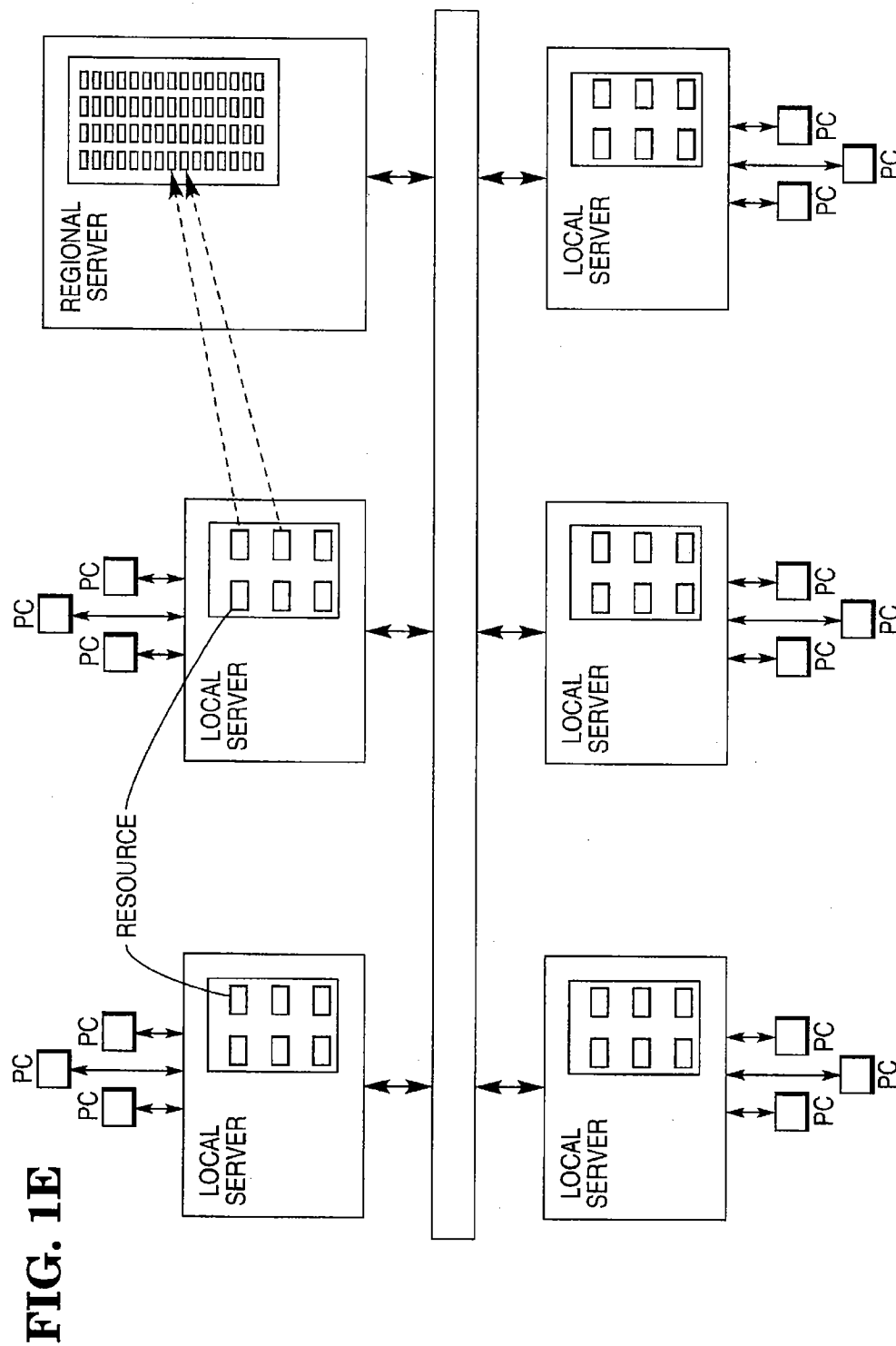


U.S. Patent

Nov. 12, 2002

Sheet 6 of 101

US 6,480,855 B1

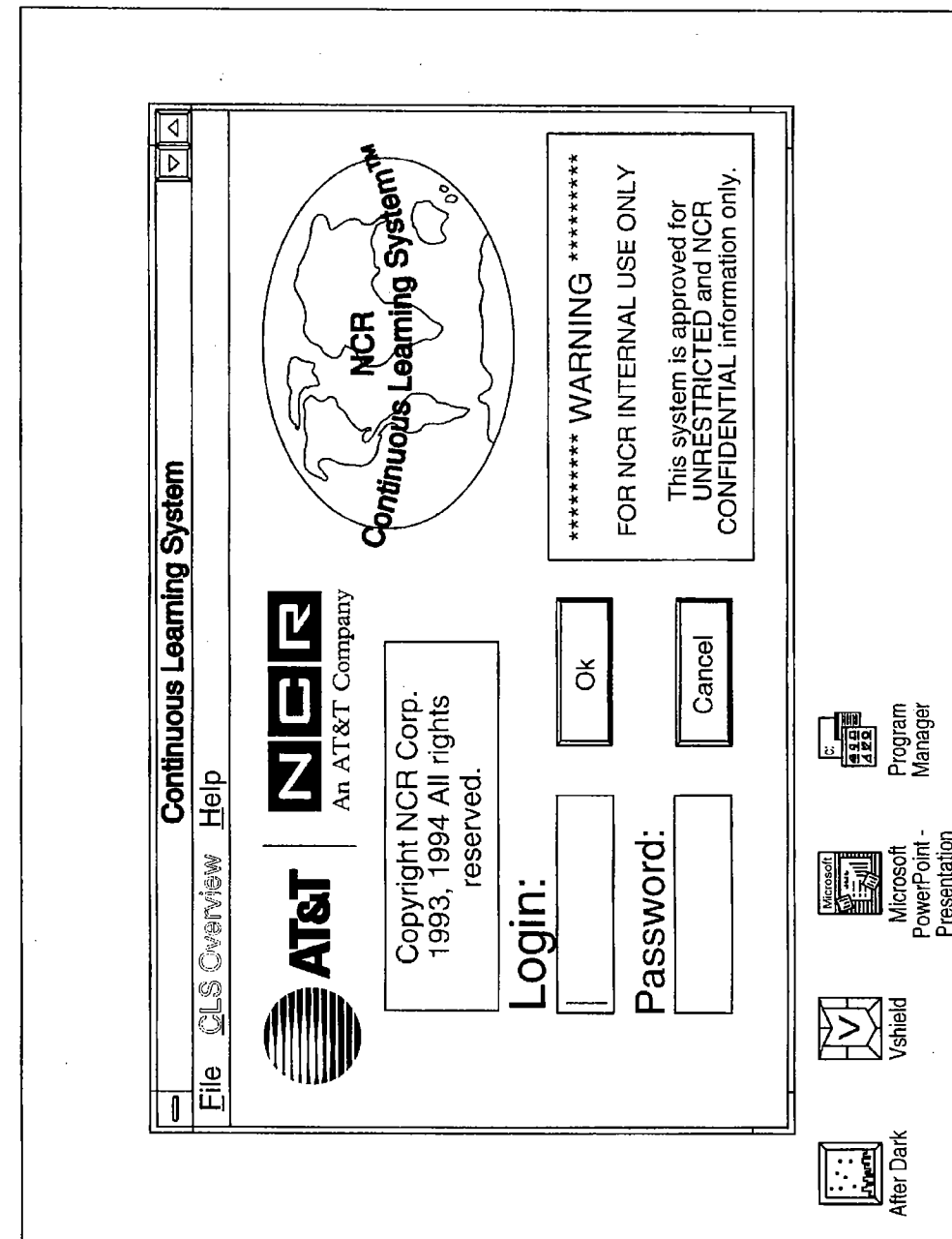


U.S. Patent

Nov. 12, 2002

Sheet 7 of 101

US 6,480,855 B1



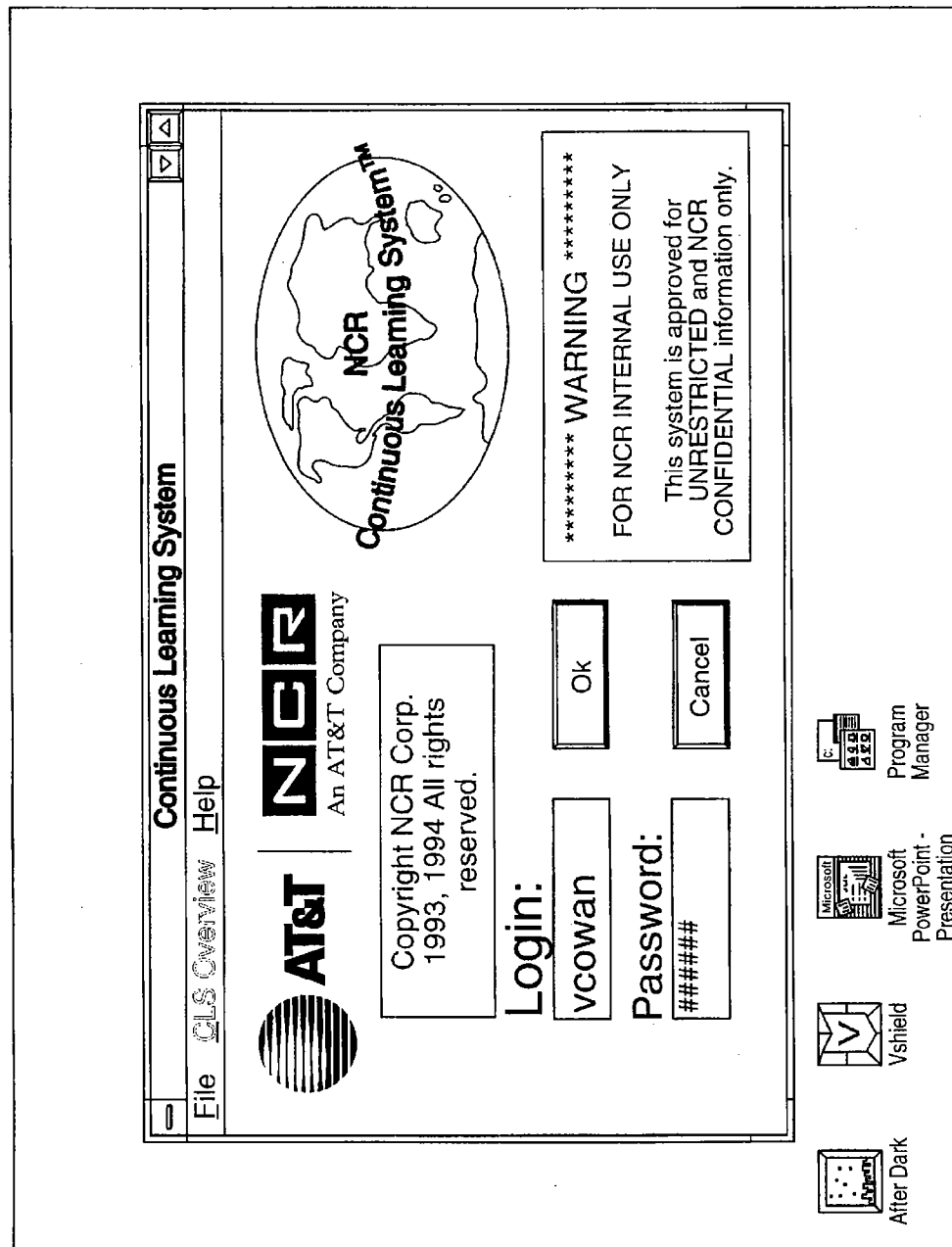
U.S. Patent

Nov. 12, 2002

Sheet 8 of 101

US 6,480,855 B1

FIG. 3



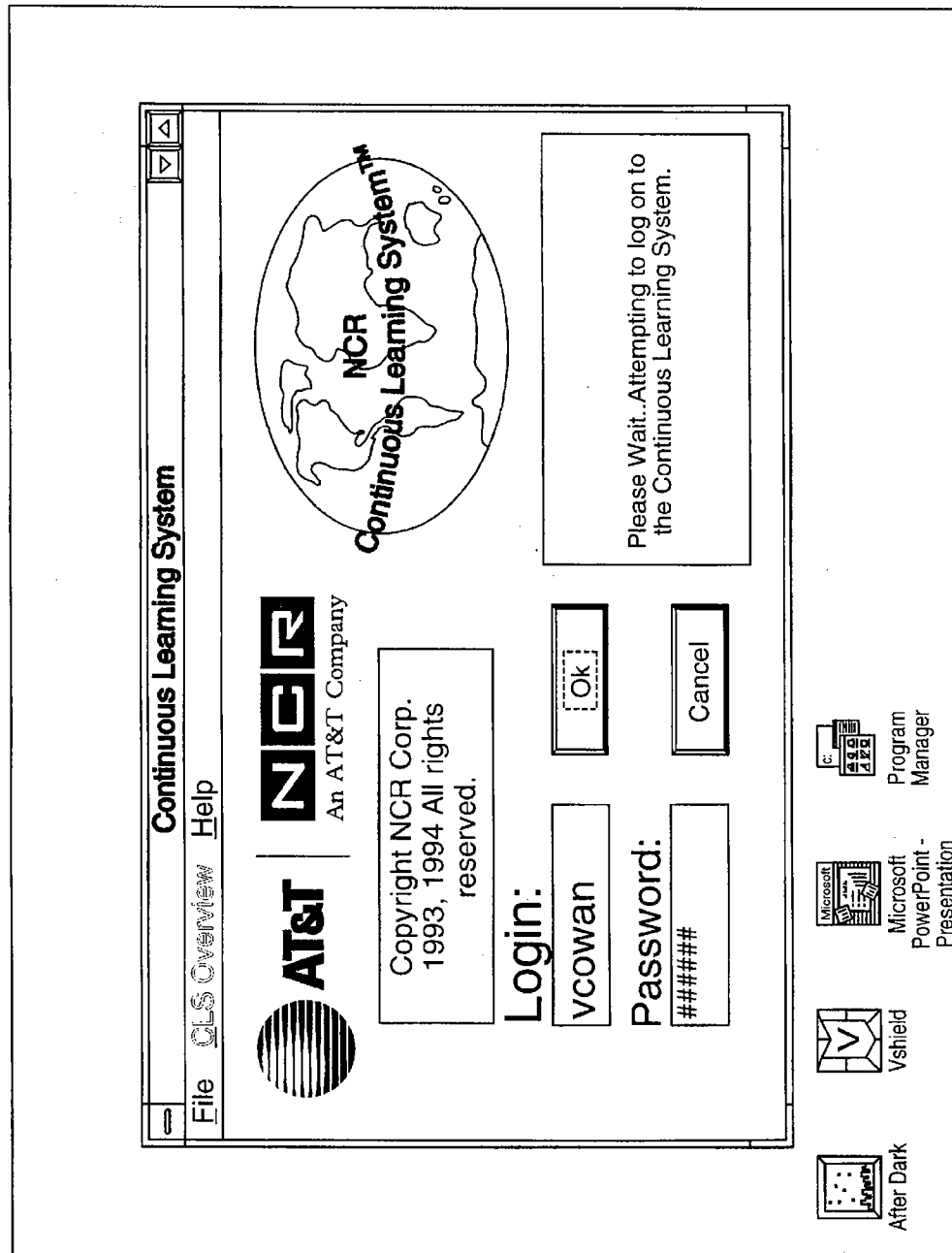
U.S. Patent

Nov. 12, 2002

Sheet 9 of 101

US 6,480,855 B1

FIG. 4



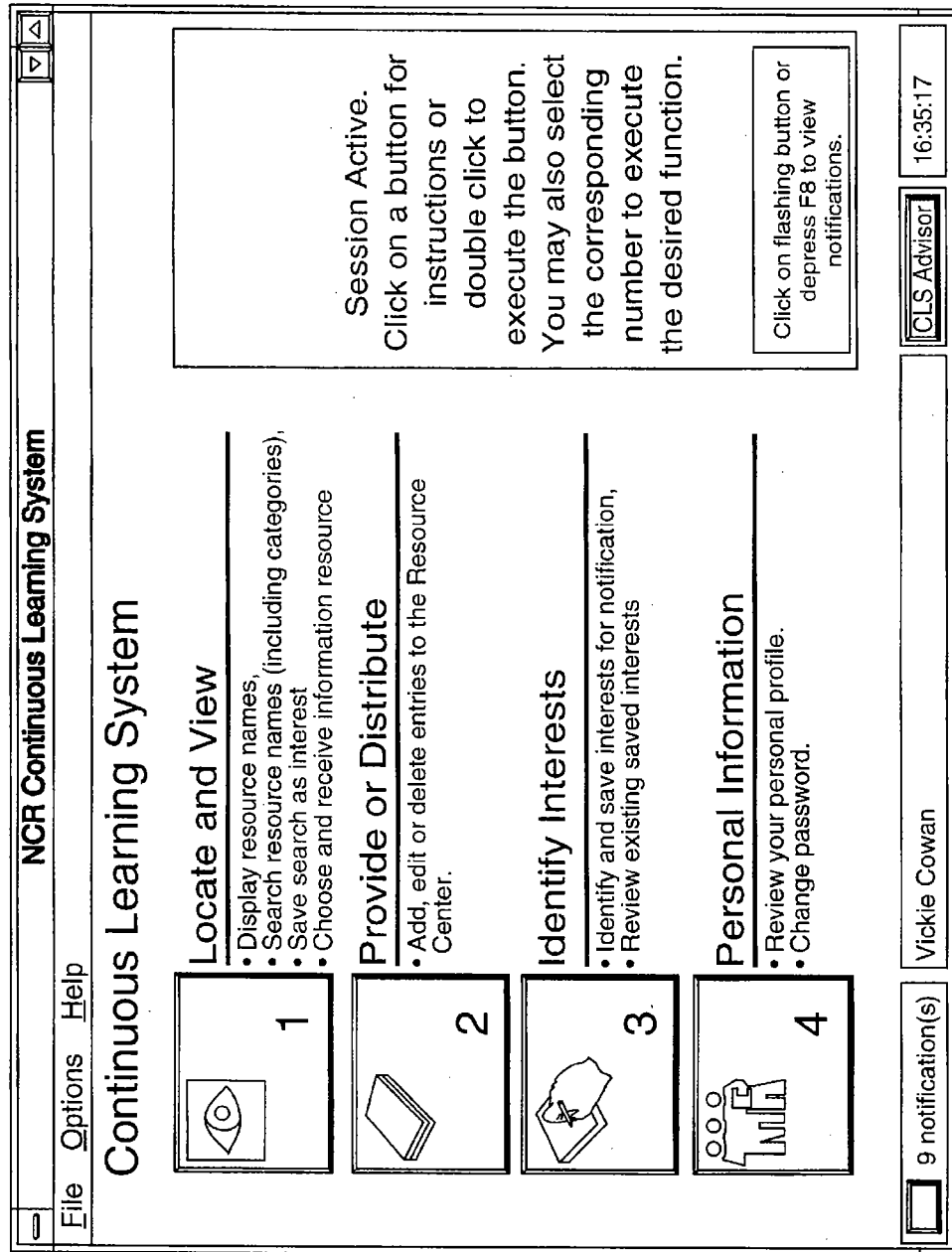
U.S. Patent

Nov. 12, 2002

Sheet 10 of 101

US 6,480,855 B1

FIG. 5



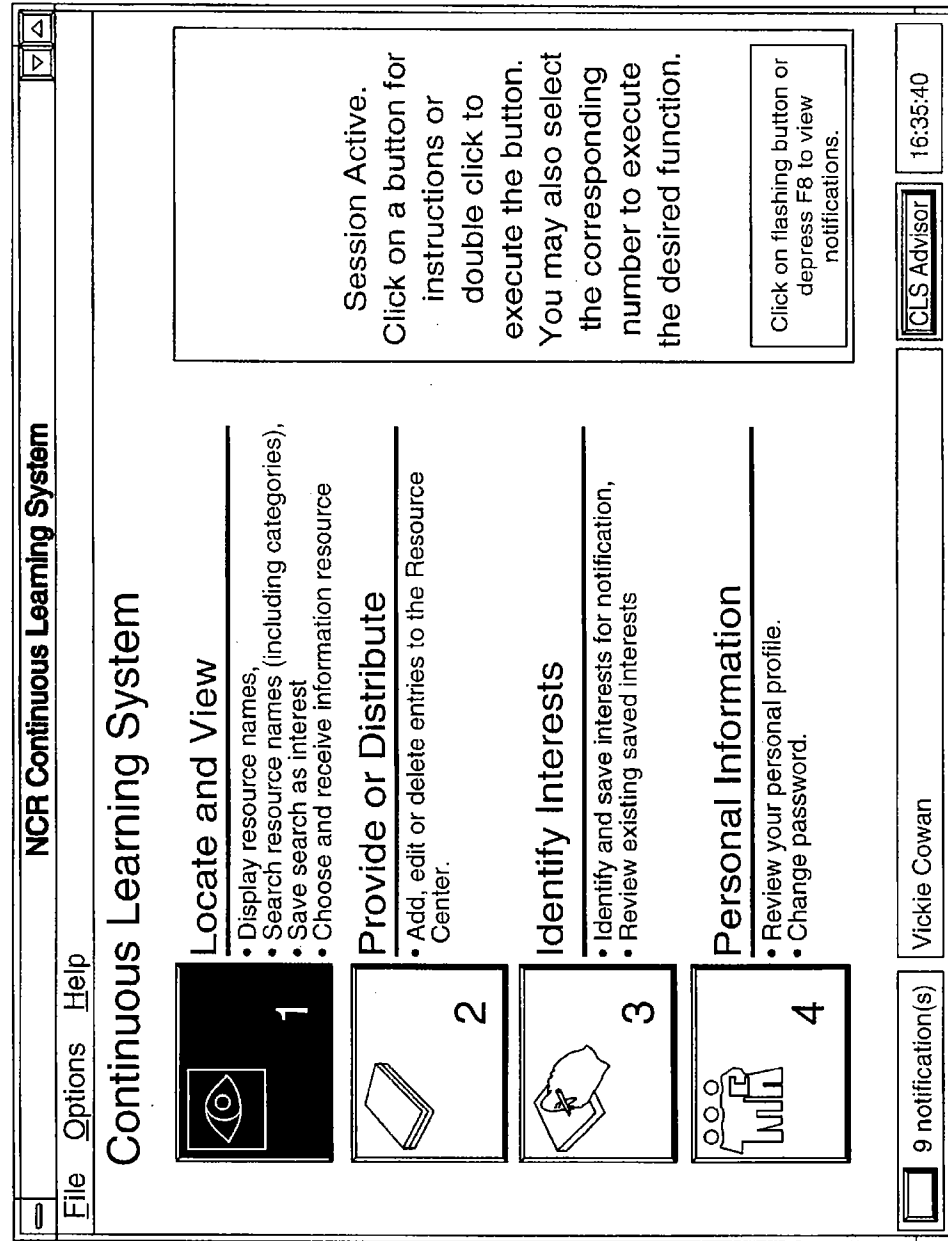
U.S. Patent

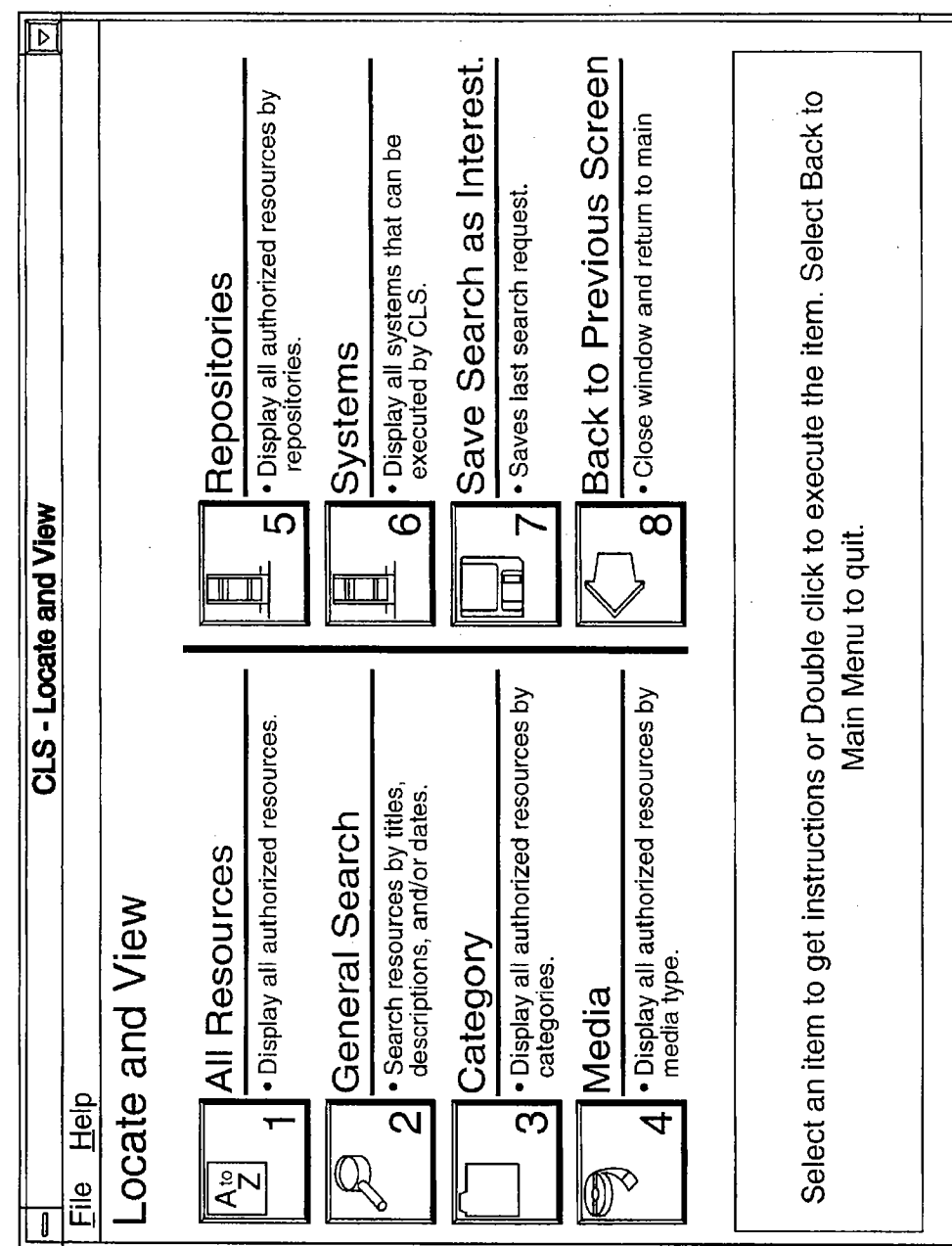
Nov. 12, 2002

Sheet 11 of 101

US 6,480,855 B1

FIG. 6



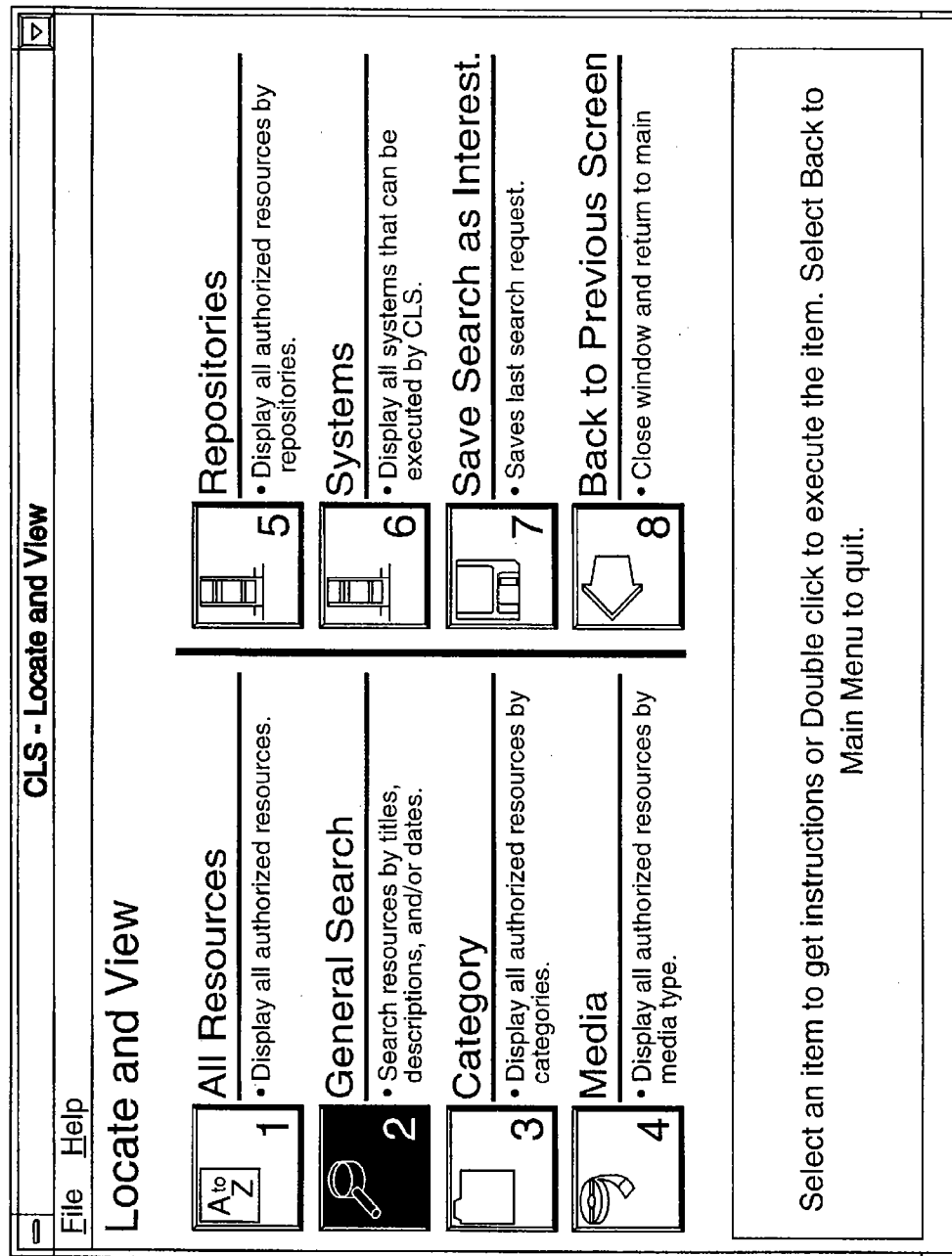


U.S. Patent

Nov. 12, 2002

Sheet 13 of 101

US 6,480,855 B1

FIG. 8

U.S. Patent

Nov. 12, 2002

Sheet 14 of 101

US 6,480,855 B1

FIG. 9

CLS - Locate and View

File Help

Search

File Help

AND-@ OR-/ NOT-!

Title: []

Description: []

Date: [] / / dd/mm/yy

AND

OR

NOT

Ok Cancel Clear Help

media

4

8

BACK TO PREVIOUS SCREEN

• Display all authorized resources by media type.

• Close window and return to main

Type in your search word, phrase or letters. Click on Search button and if there are any resources that match your search entry a list will be displayed or an error will be displayed. Press F1 for help.

U.S. Patent

Nov. 12, 2002

Sheet 15 of 101

US 6,480,855 B1

FIG. 10

CLS - Locate and View

File Help

Search

AND-@ OR-/ NOT-!

Title: unix

Description: AND

Date: / / dd/mm/yy

Ok Cancel Clear Help

media

4

8

BACK TO PREVIOUS SCREEN

• Display all authorized resources by media type.

• Close window and return to main

Type in your search word, phrase or letters. Click on Search button and if there are any resources that match your search entry a list will be displayed or an error will be displayed. Press F1 for help.

U.S. Patent

Nov. 12, 2002

Sheet 16 of 101

US 6,480,855 B1

FIG. 11

Catalog Search Results

File Help

Resource Profile...

7 entries returned.

	Media	Date/Time	Title
1	On Line	12/08/93 16:25	WWSM - NCR UNIX "Ready for Prime Time"
2	On Line	12/16/93 13:53	UNIX Reference Pak: Part 1 of 4 - Table of contents
3	On Line	12/16/93 14:02	UNIX Reference Pak: Part 2 of 4 - AT&T/NCRs Position on
4	On Line	12/16/93 14:05	UNIX Reference Pak: Part 3 of 4 - System Overview
5	On Line	12/16/93 14:09	UNIX Reference Pak: Part 4 of 4 - HP-UX vs. NCR SVR4 M
6	On Line	01/03/94 15:52	NCR UNIX SVR4 MP-RAS Rel 2.02 Release Letter
7	On Line	01/19/94 09:57	NCR UNIX Online Library

Retrieve Close

U.S. Patent

Nov. 12, 2002

Sheet 17 of 101

US 6,480,855 B1

FIG. 12

Catalog Search Results

File Help

Resource Profile...

7 entries returned.

	Media	Date/Time	Title
1	On Line	12/08/93 16:25	WWSM - NCR UNIX "Ready for Prime Time"
2	On Line	12/16/93 13:53	UNIX Reference Pak: Part 1 of 4 - Table of contents
3	On Line	12/16/93 14:02	UNIX Reference Pak: Part 2 of 4 - AT&T/NCRs Position on
4	On Line	12/16/93 14:05	UNIX Reference Pak: Part 3 of 4 - System Overview
5	On Line	12/16/93 14:09	UNIX Reference Pak: Part 4 of 4 - HP-UX vs. NCR SVR4 M
6	On Line	01/03/94 15:52	NCR UNIX SVR4 MP-RAS Rel 2.02 Release Letter
7	On Line	01/19/94 09:57	NCR UNIX Online Library

Retrieve Close

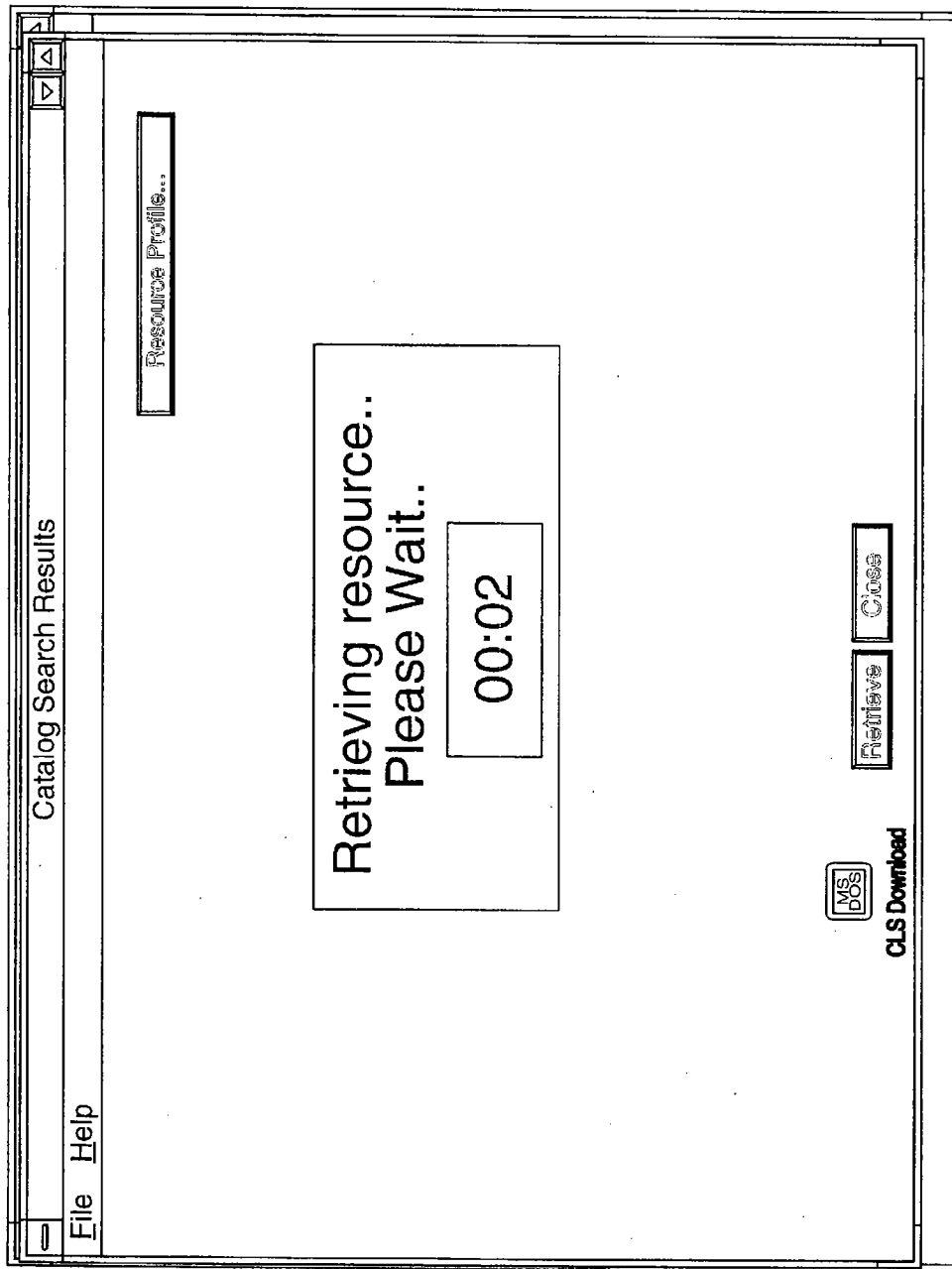
U.S. Patent

Nov. 12, 2002

Sheet 18 of 101

US 6,480,855 B1

FIG. 13



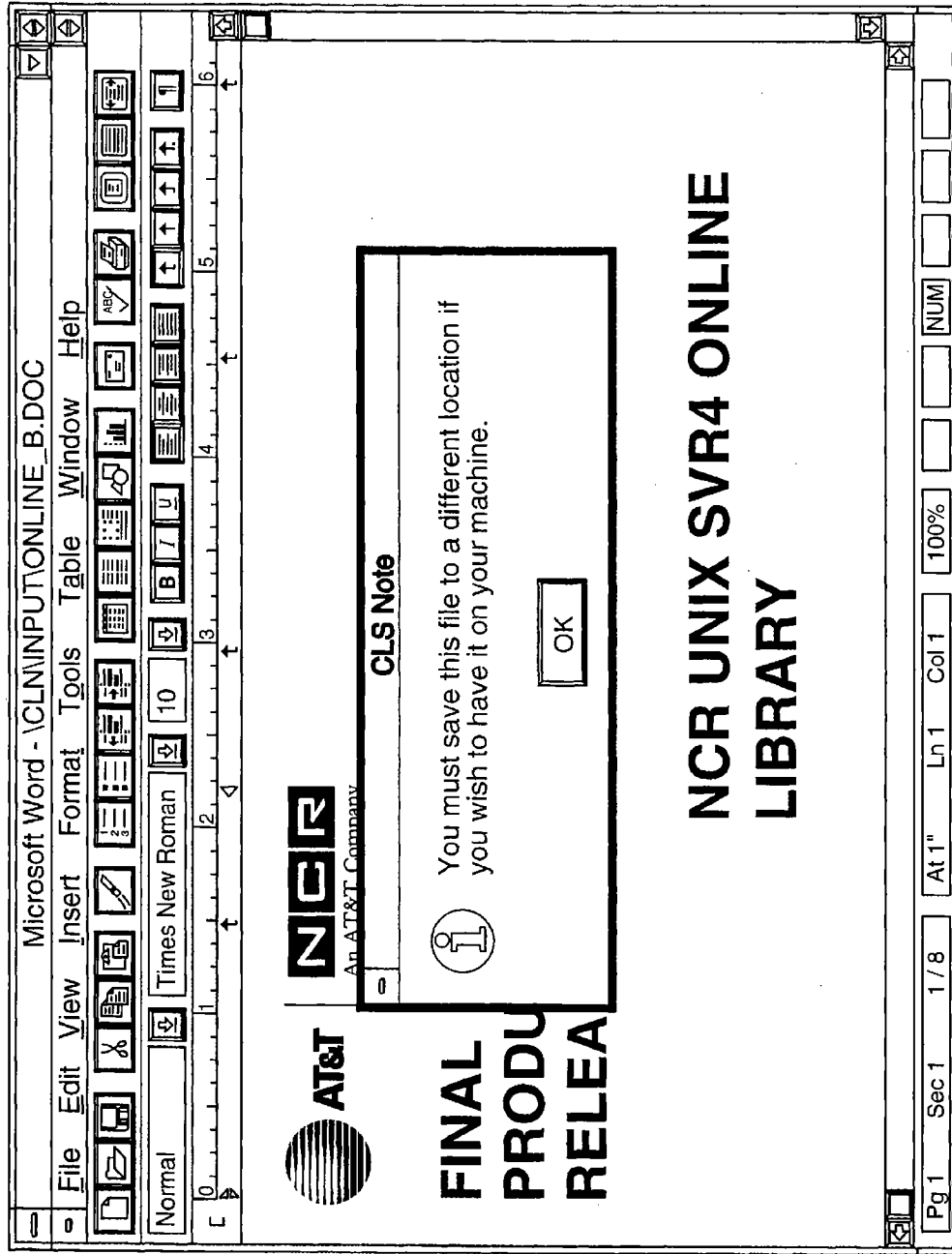
U.S. Patent

Nov. 12, 2002

Sheet 19 of 101

US 6,480,855 B1

FIG. 14



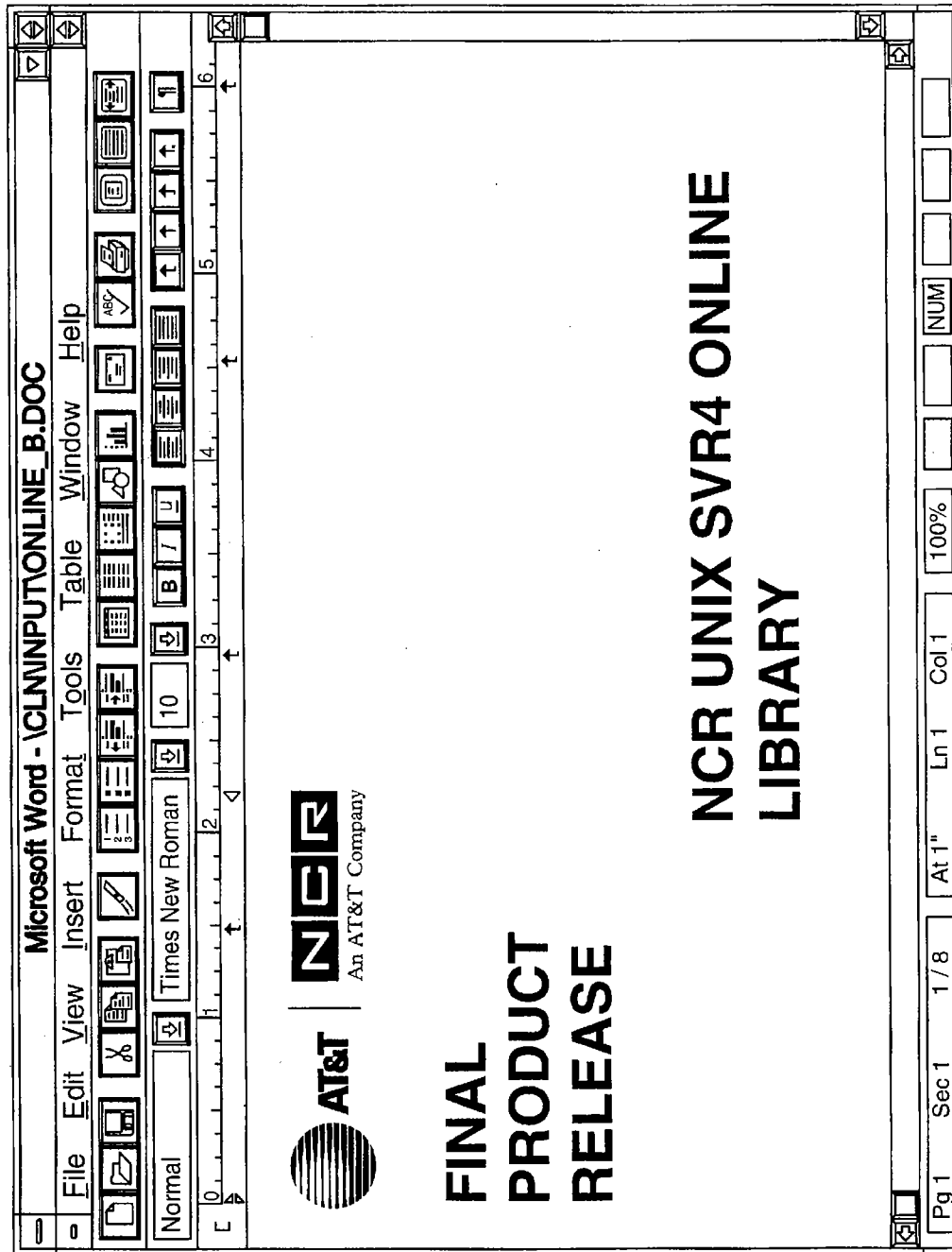
U.S. Patent

Nov. 12, 2002

Sheet 20 of 101

US 6,480,855 B1

FIG. 15



U.S. Patent

Nov. 12, 2002

Sheet 21 of 101

US 6,480,855 B1

FIG. 16

CLS - Locate and View

File Help

Locate View Print Find Help

Search

File Help

AND-@ OR-/ NOT-!

Title: linux@library AND

Description: ON

Date: // dd/mm/yy

Ok Cancel Clear Help

BACK TO PREVIOUS SCREEN

• Close window and return to main

4 8

live media

• Display all authorized resources by media type.

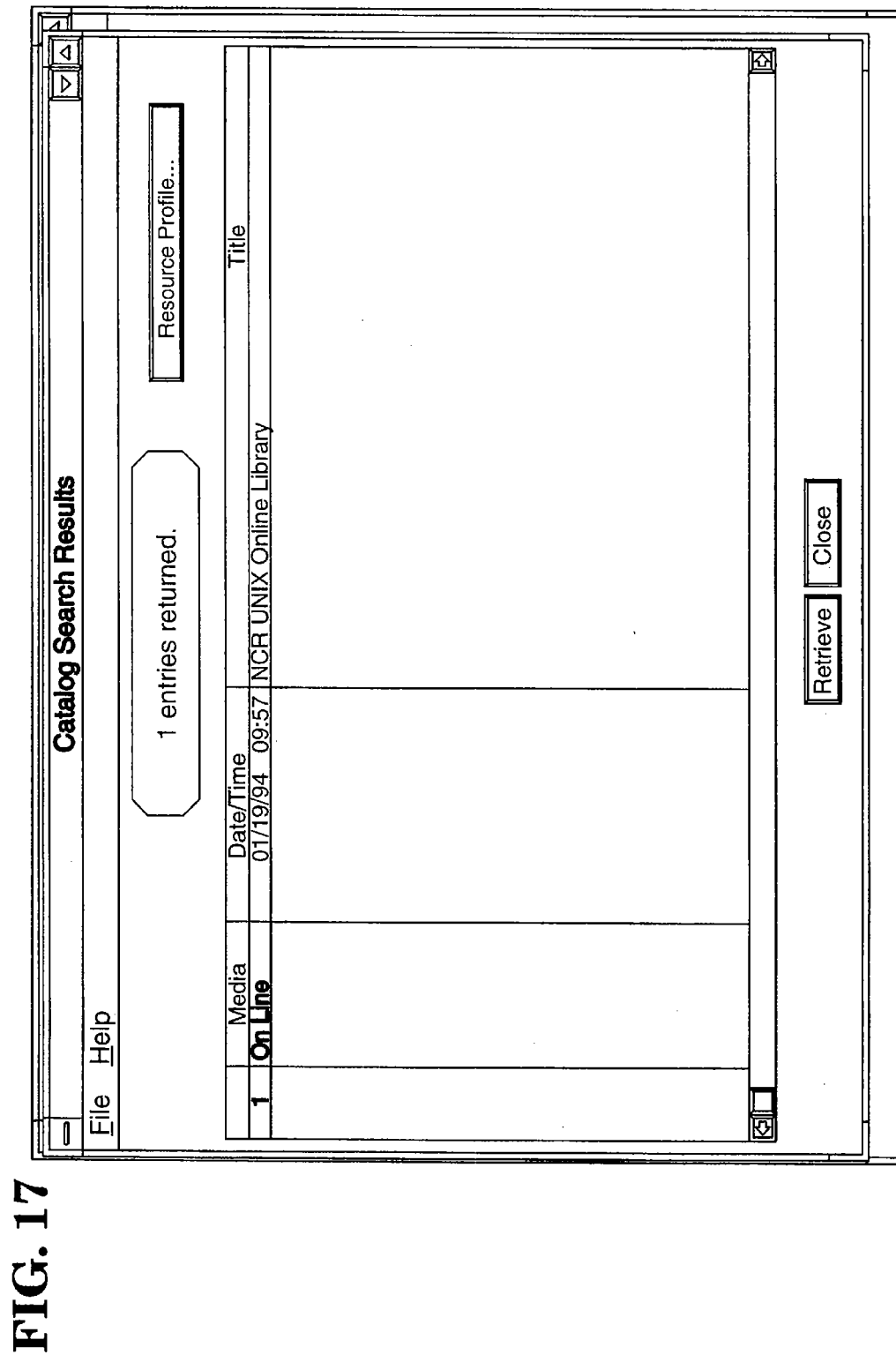
Type in your search word, phrase or letters. Click on Search button and if there are any resources that match your search entry a list will be displayed or an error will be displayed. Press F1 for help.

U.S. Patent

Nov. 12, 2002

Sheet 22 of 101

US 6,480,855 B1

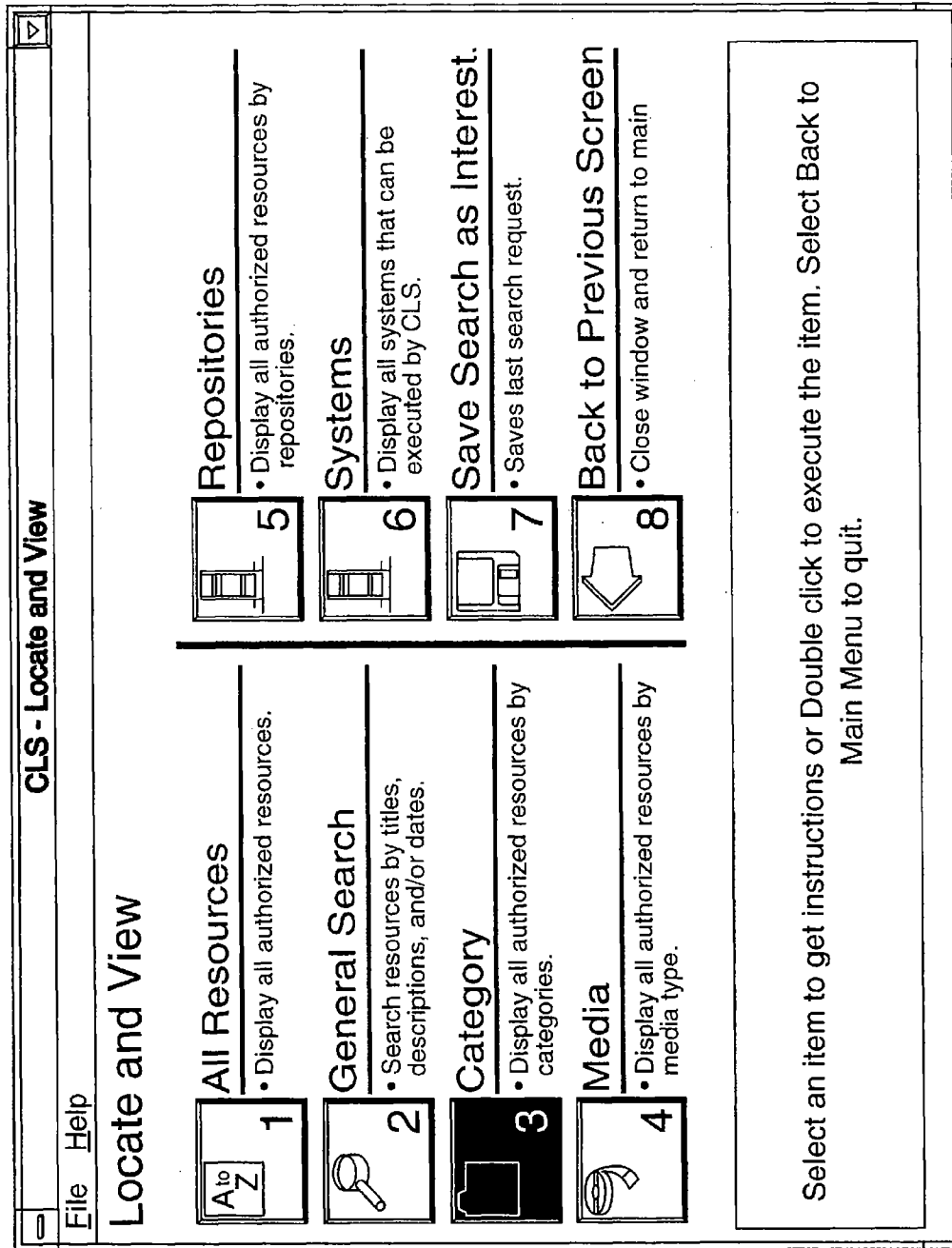


U.S. Patent

Nov. 12, 2002

Sheet 23 of 101

US 6,480,855 B1

FIG. 18

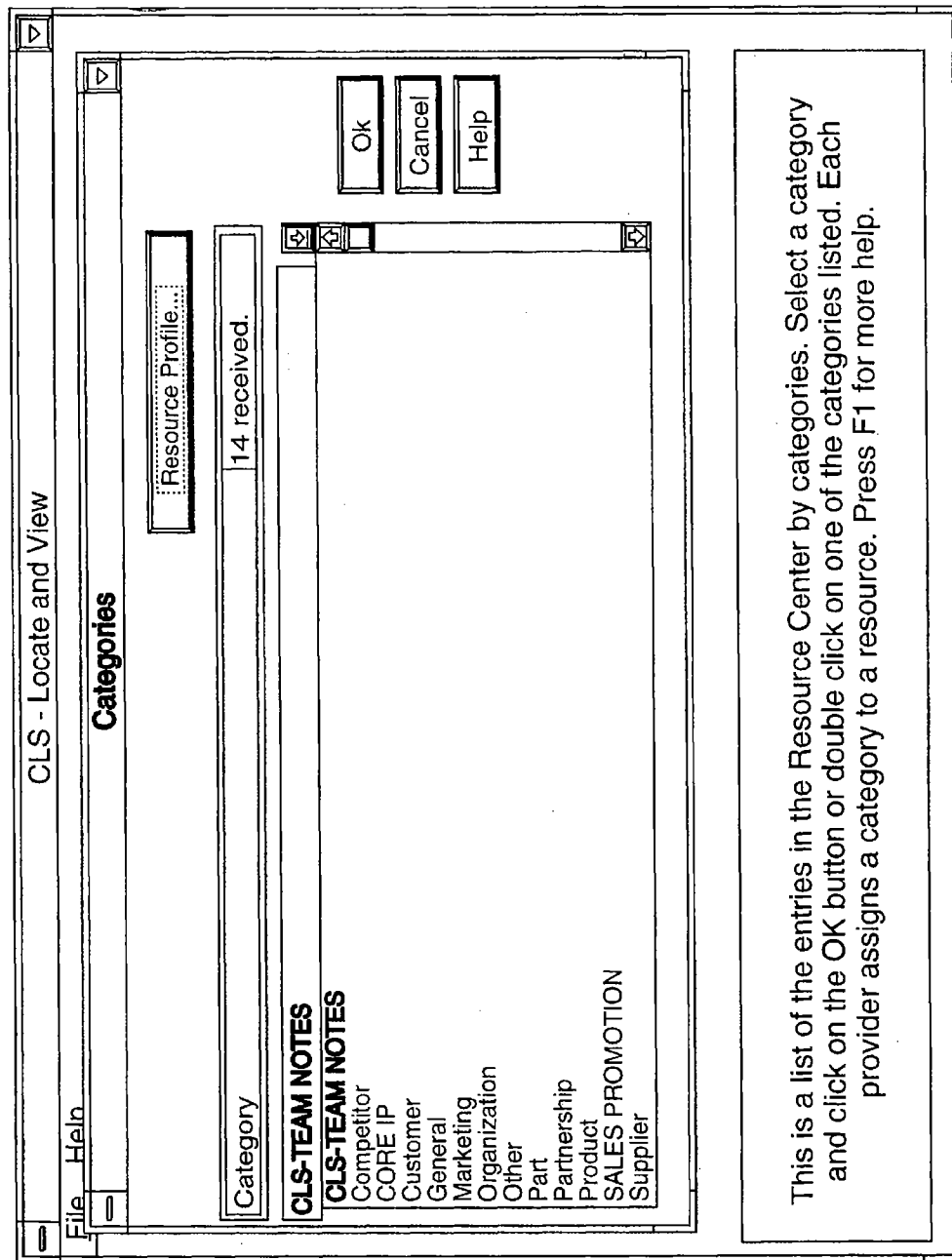
U.S. Patent

Nov. 12, 2002

Sheet 24 of 101

US 6,480,855 B1

FIG. 19

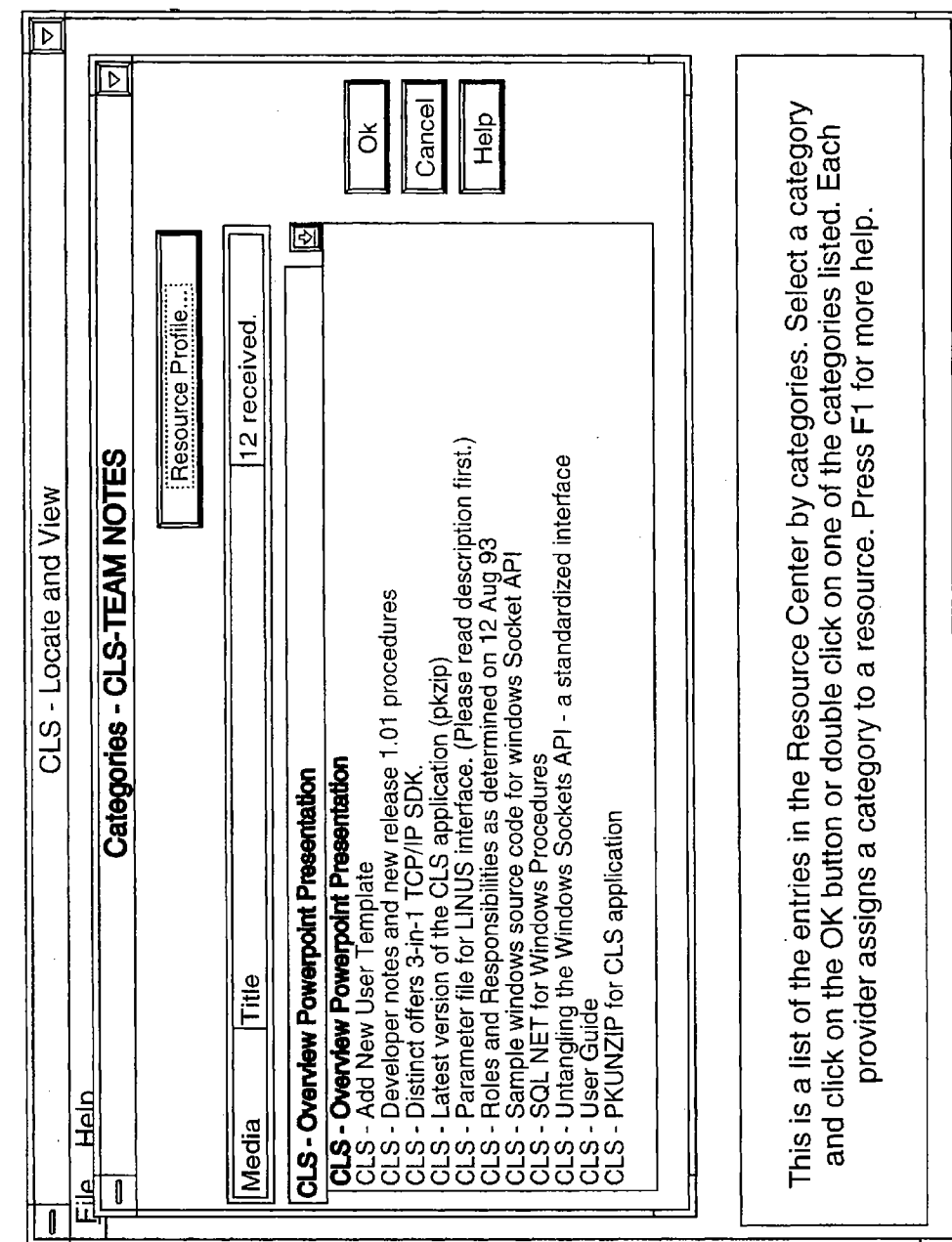


U.S. Patent

Nov. 12, 2002

Sheet 25 of 101

US 6,480,855 B1



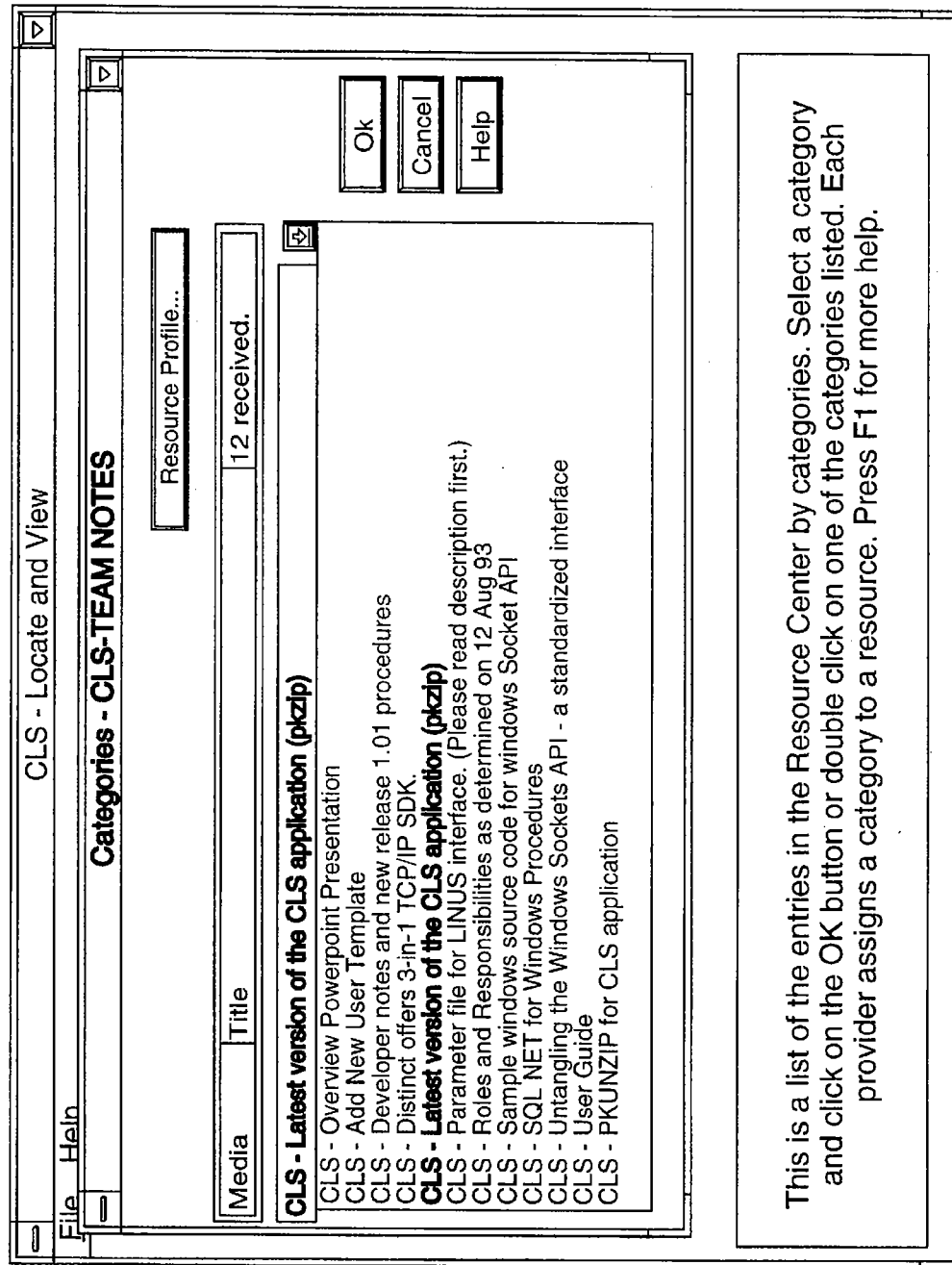
U.S. Patent

Nov. 12, 2002

Sheet 26 of 101

US 6,480,855 B1

FIG. 21

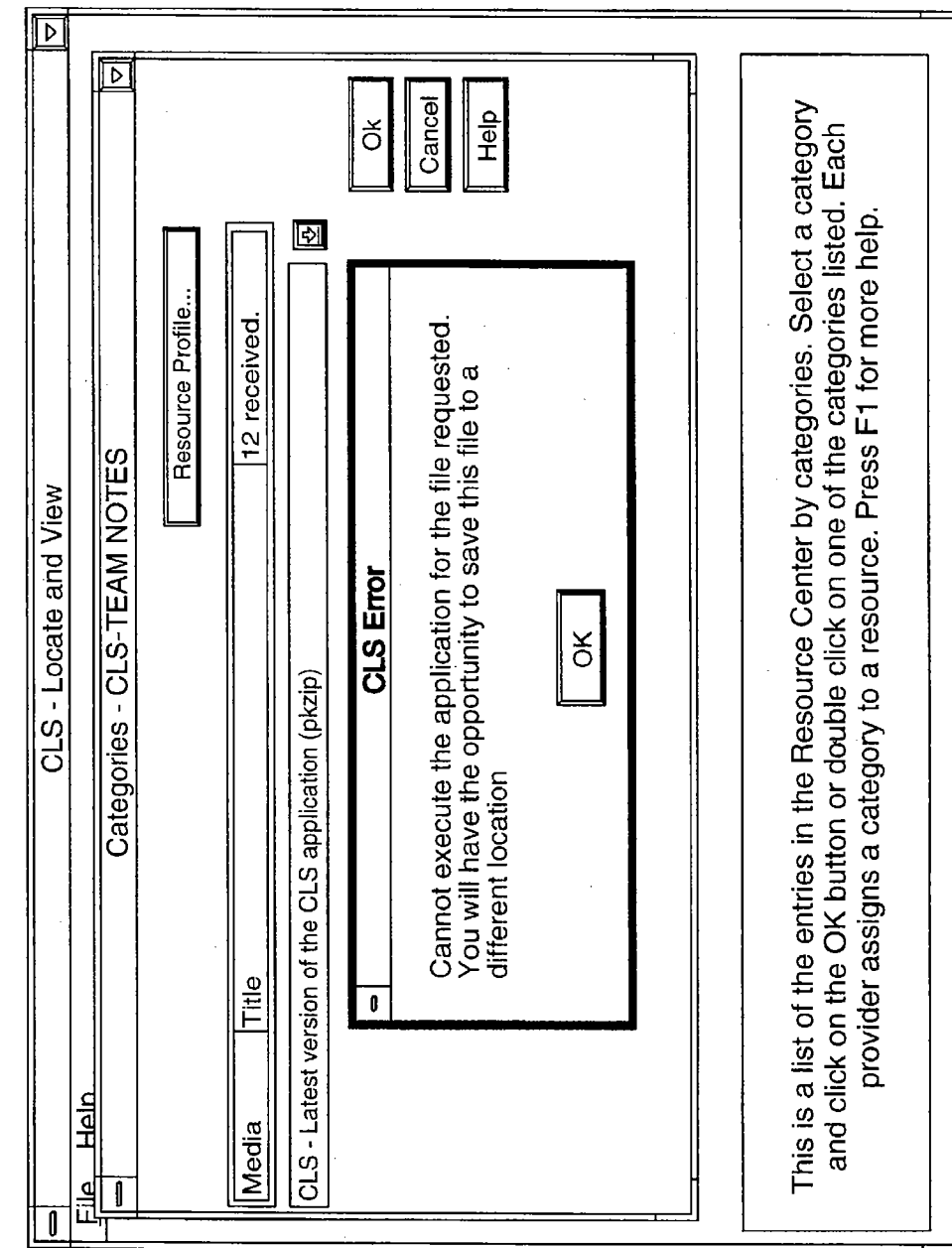


U.S. Patent

Nov. 12, 2002

Sheet 27 of 101

US 6,480,855 B1

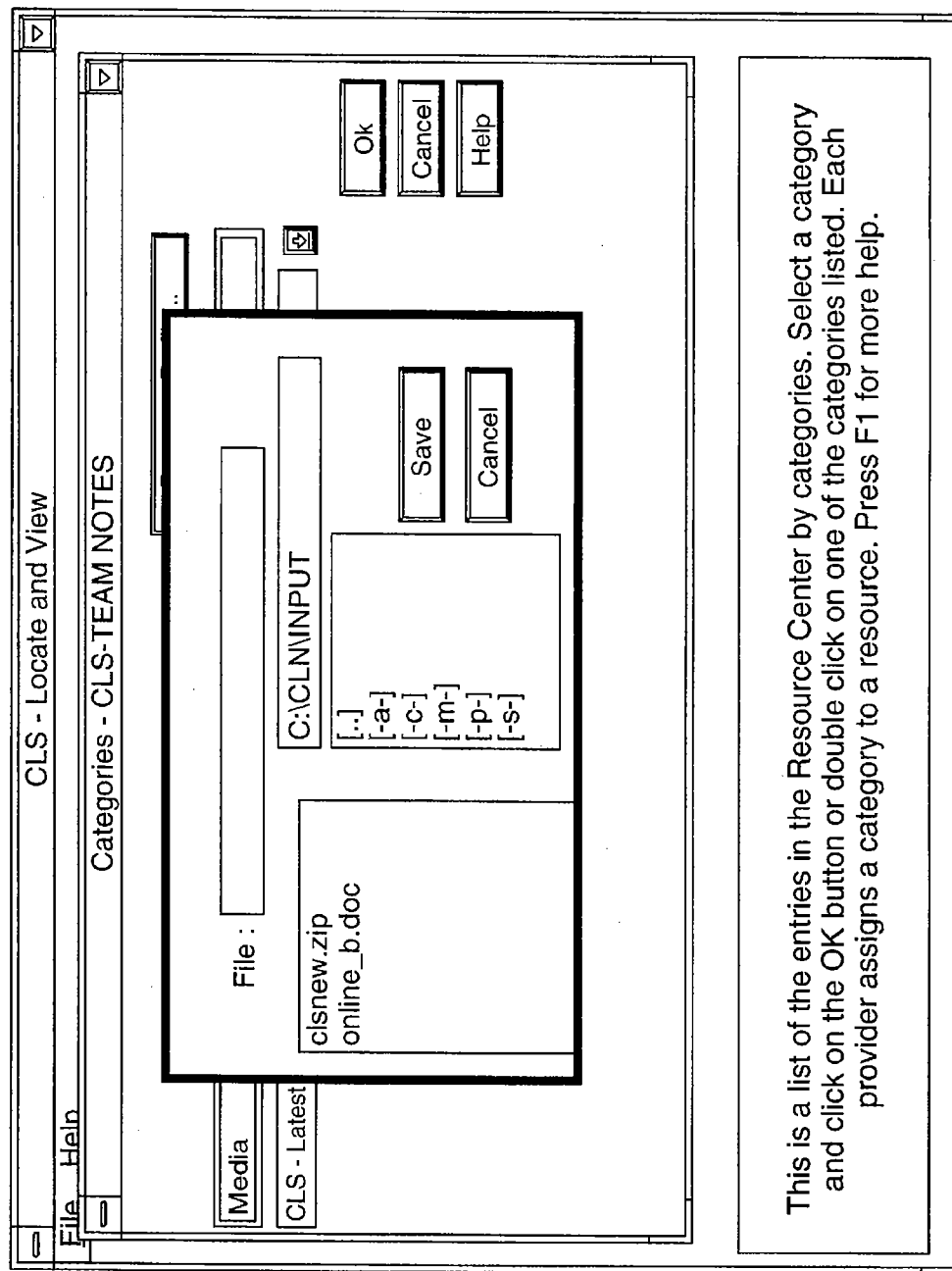


U.S. Patent

Nov. 12, 2002

Sheet 28 of 101

US 6,480,855 B1

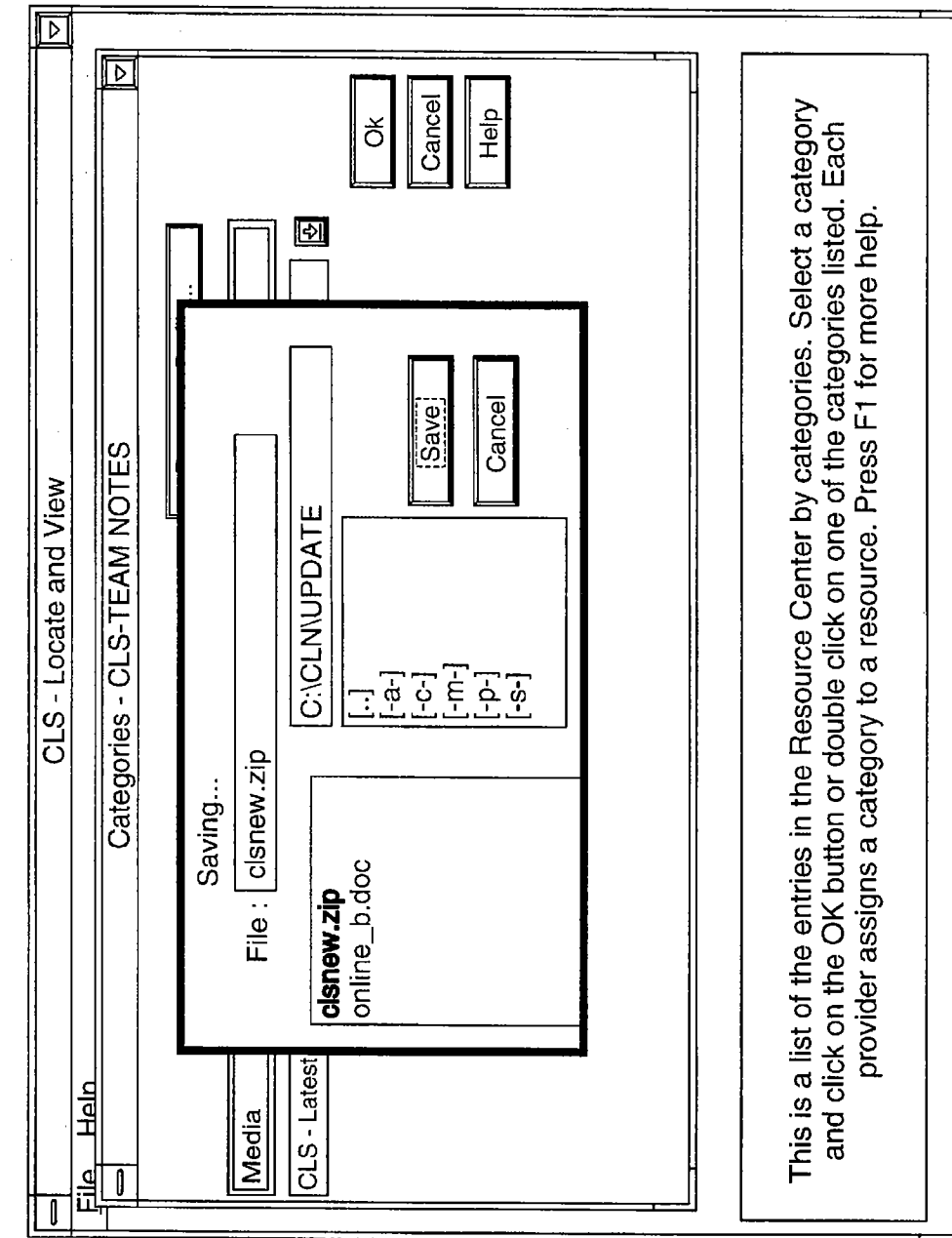
FIG. 23

U.S. Patent

Nov. 12, 2002

Sheet 29 of 101

US 6,480,855 B1



This is a list of the entries in the Resource Center by categories. Select a category and click on the OK button or double click on one of the categories listed. Each provider assigns a category to a resource. Press F1 for more help.

FIG. 24

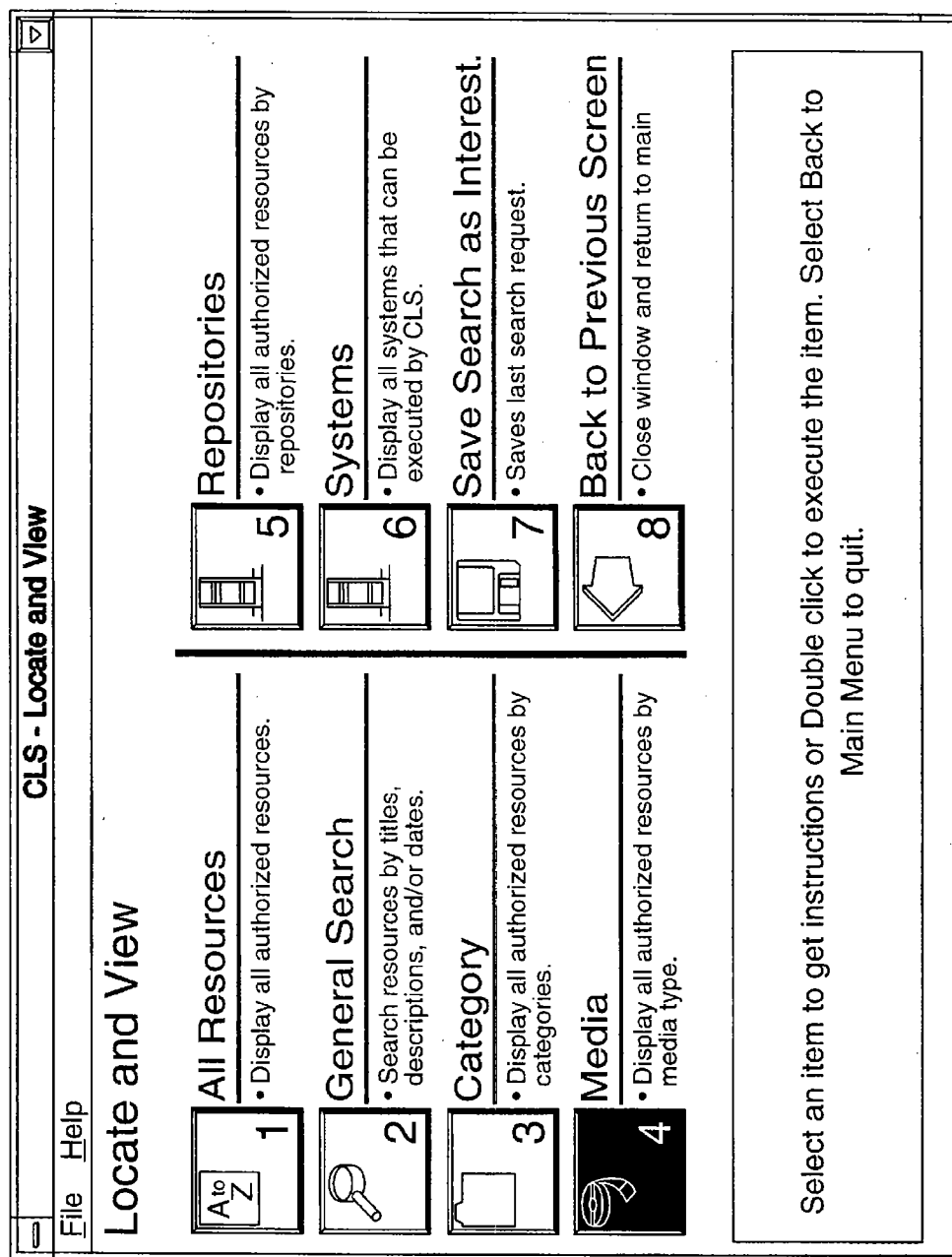
U.S. Patent

Nov. 12, 2002

Sheet 30 of 101

US 6,480,855 B1

FIG. 25



U.S. Patent

Nov. 12, 2002

Sheet 31 of 101

US 6,480,855 B1

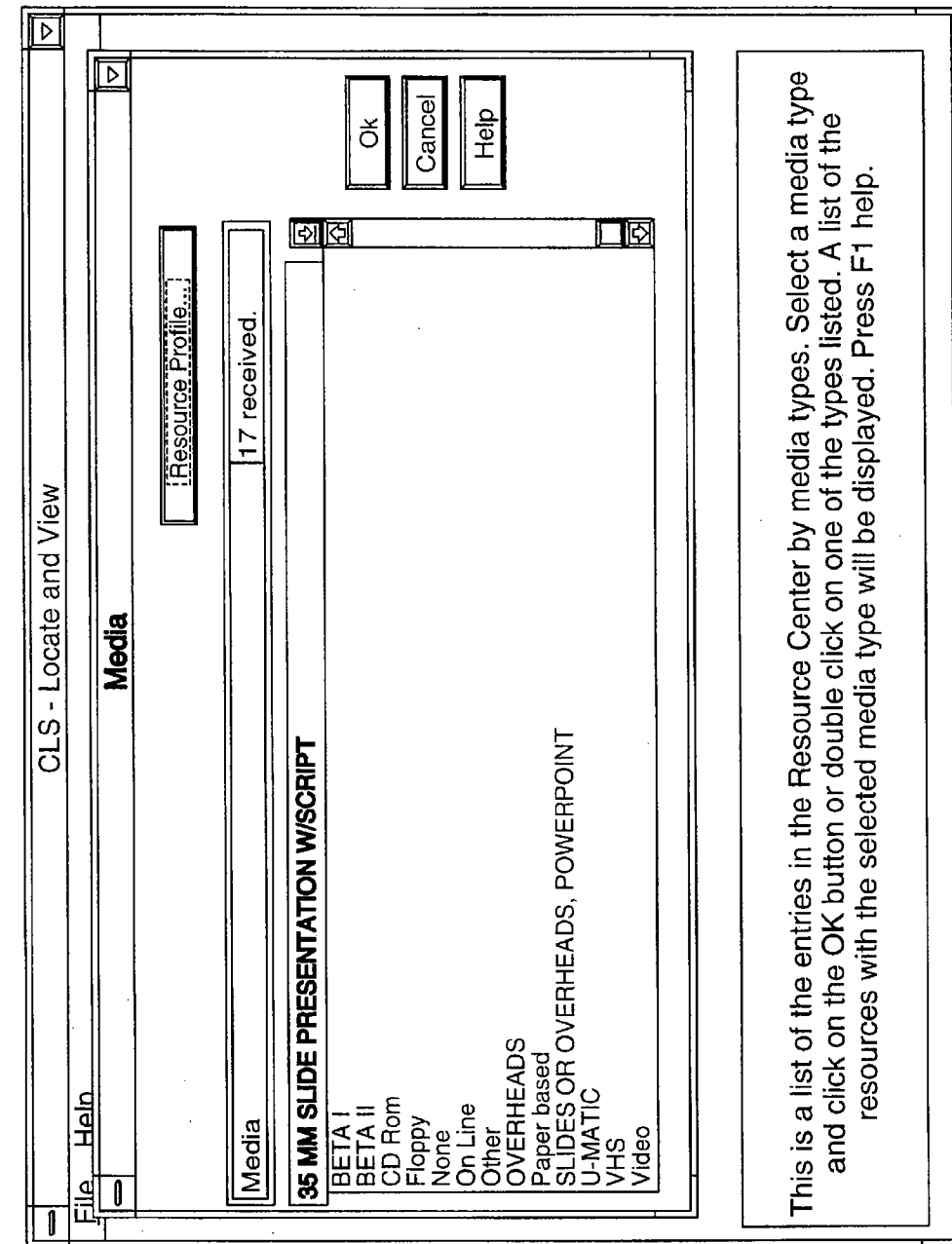


FIG. 26

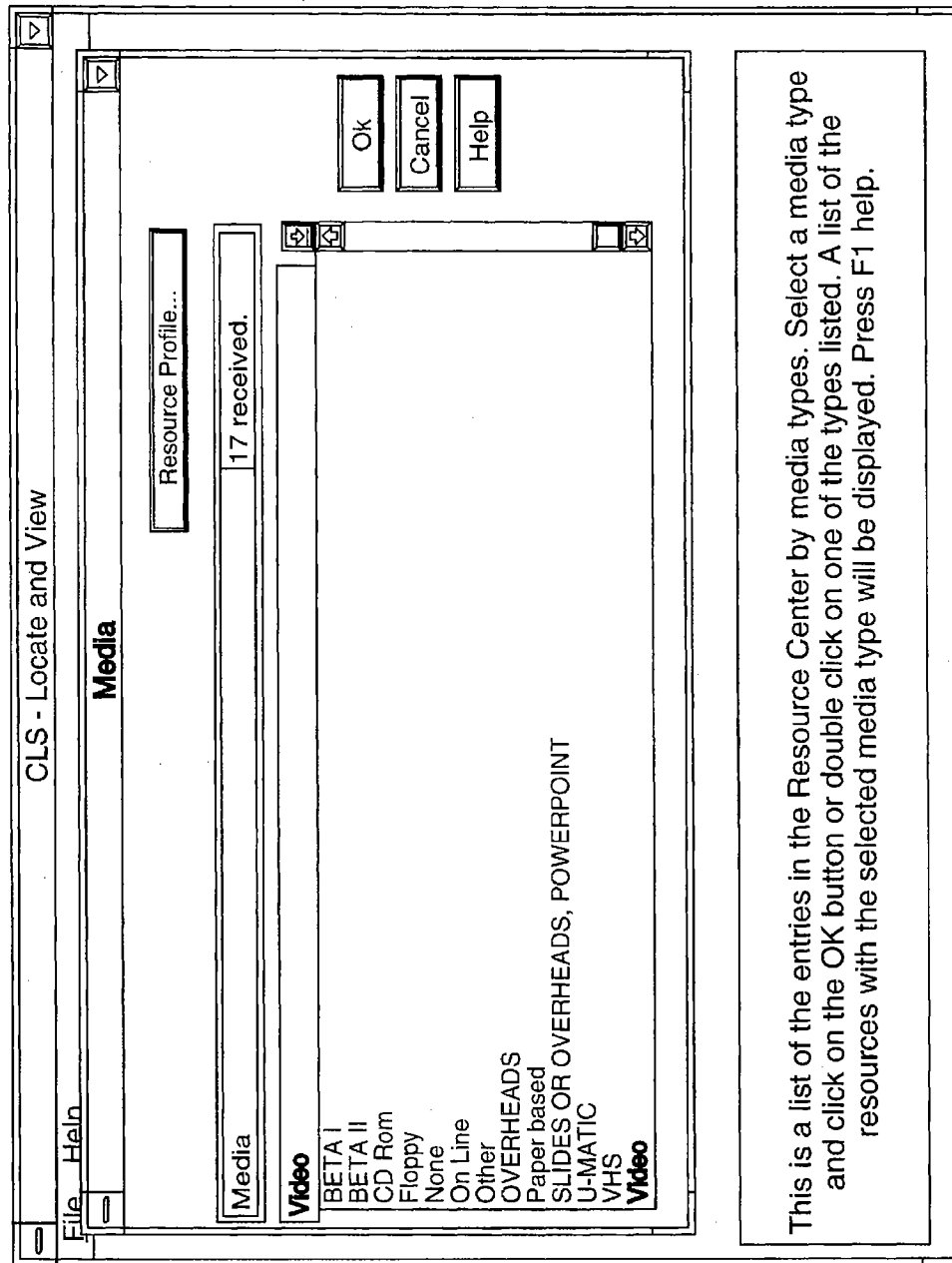
U.S. Patent

Nov. 12, 2002

Sheet 32 of 101

US 6,480,855 B1

FIG. 27



This is a list of the entries in the Resource Center by media types. Select a media type and click on the OK button or double click on one of the types listed. A list of the resources with the selected media type will be displayed. Press F1 help.

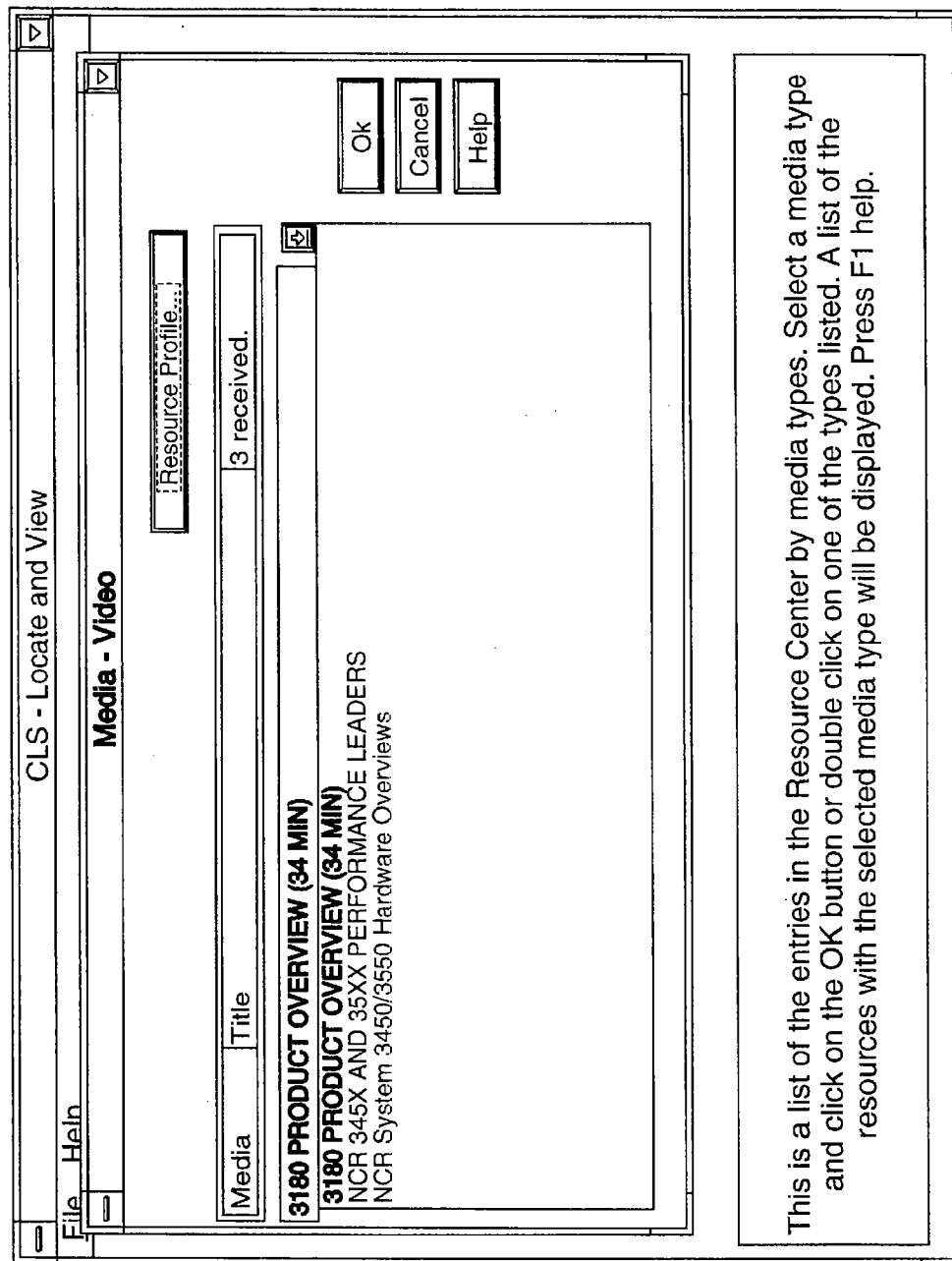
U.S. Patent

Nov. 12, 2002

Sheet 33 of 101

US 6,480,855 B1

FIG. 28

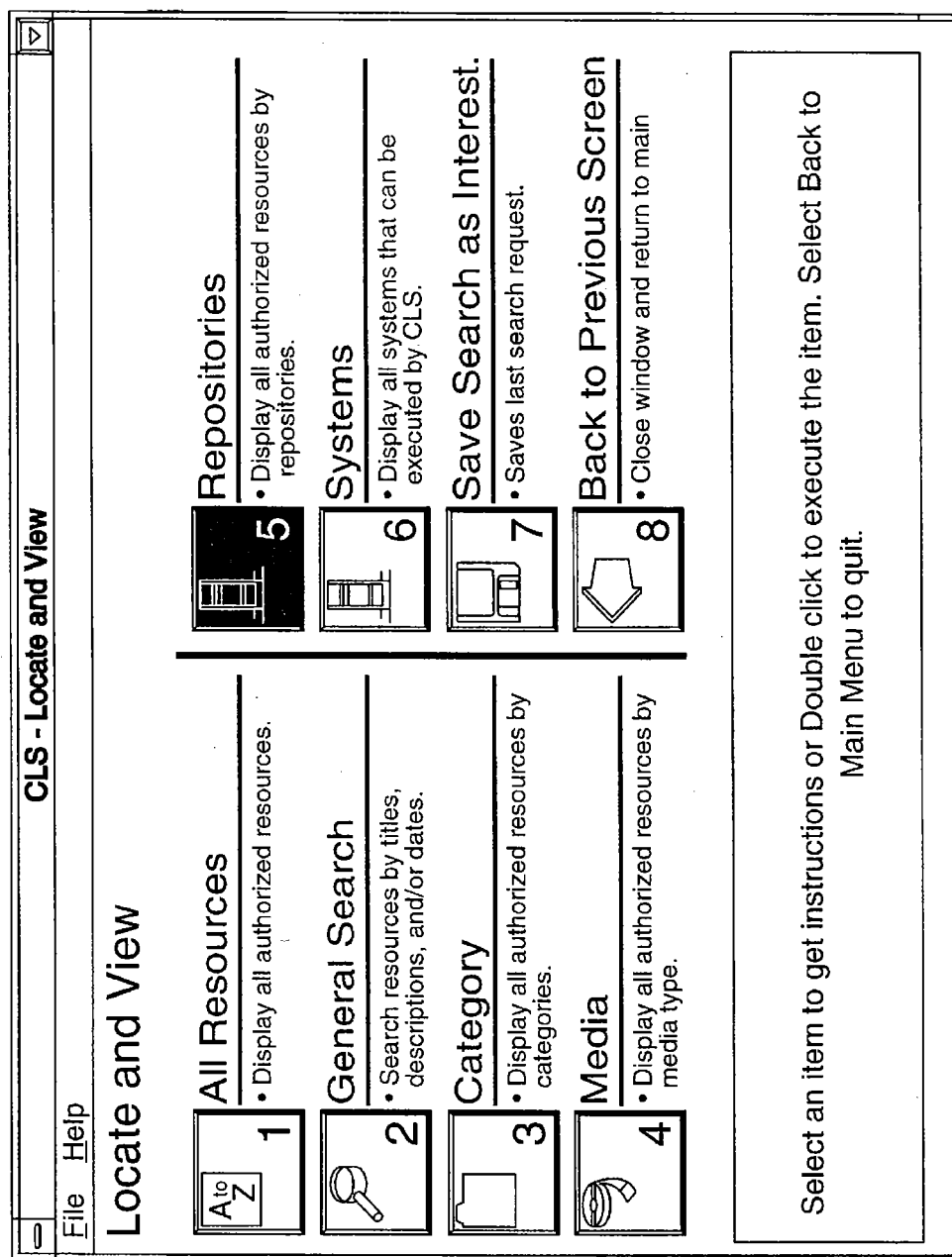


U.S. Patent

Nov. 12, 2002

Sheet 34 of 101

US 6,480,855 B1

FIG. 29

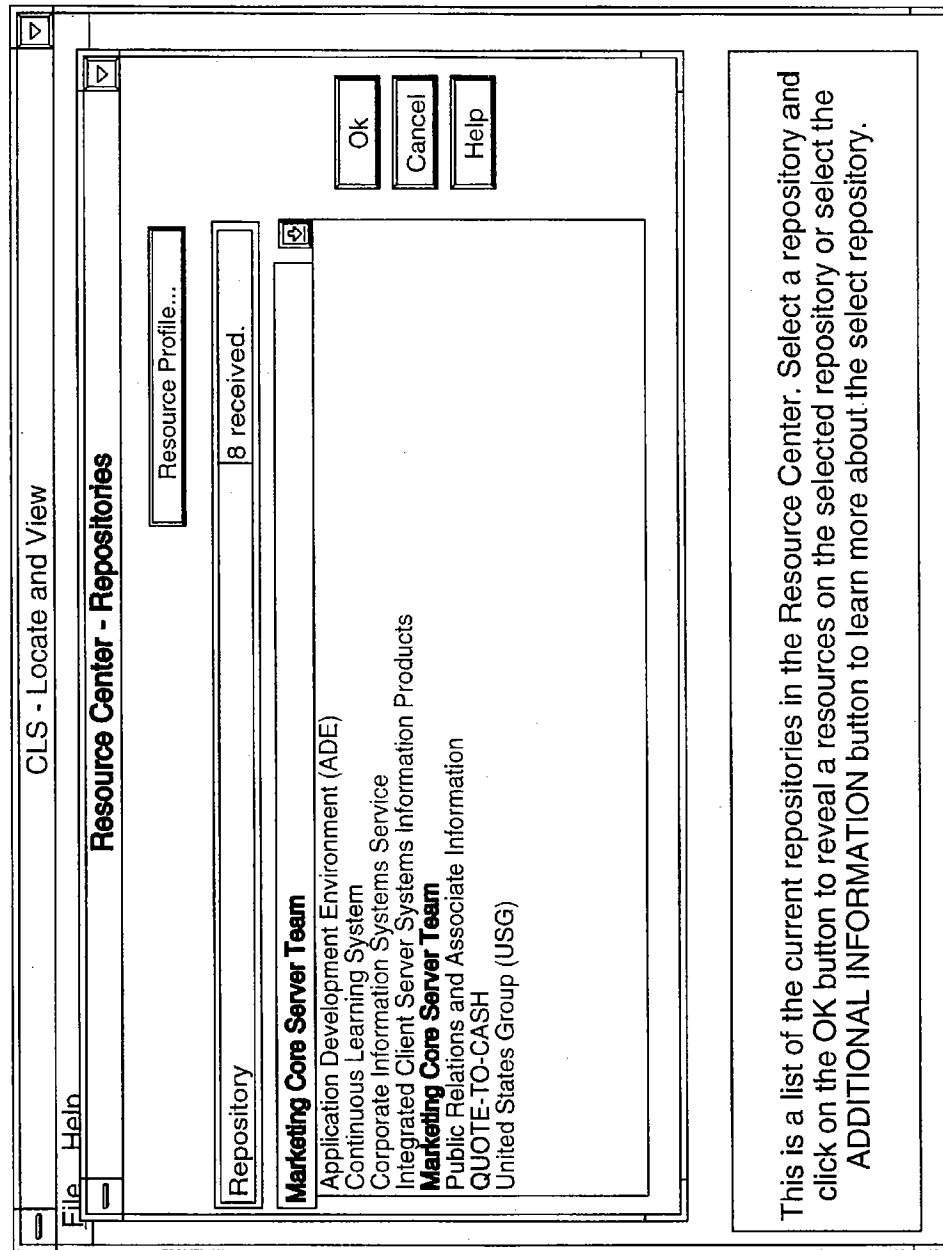
U.S. Patent

Nov. 12, 2002

Sheet 35 of 101

US 6,480,855 B1

FIG. 30



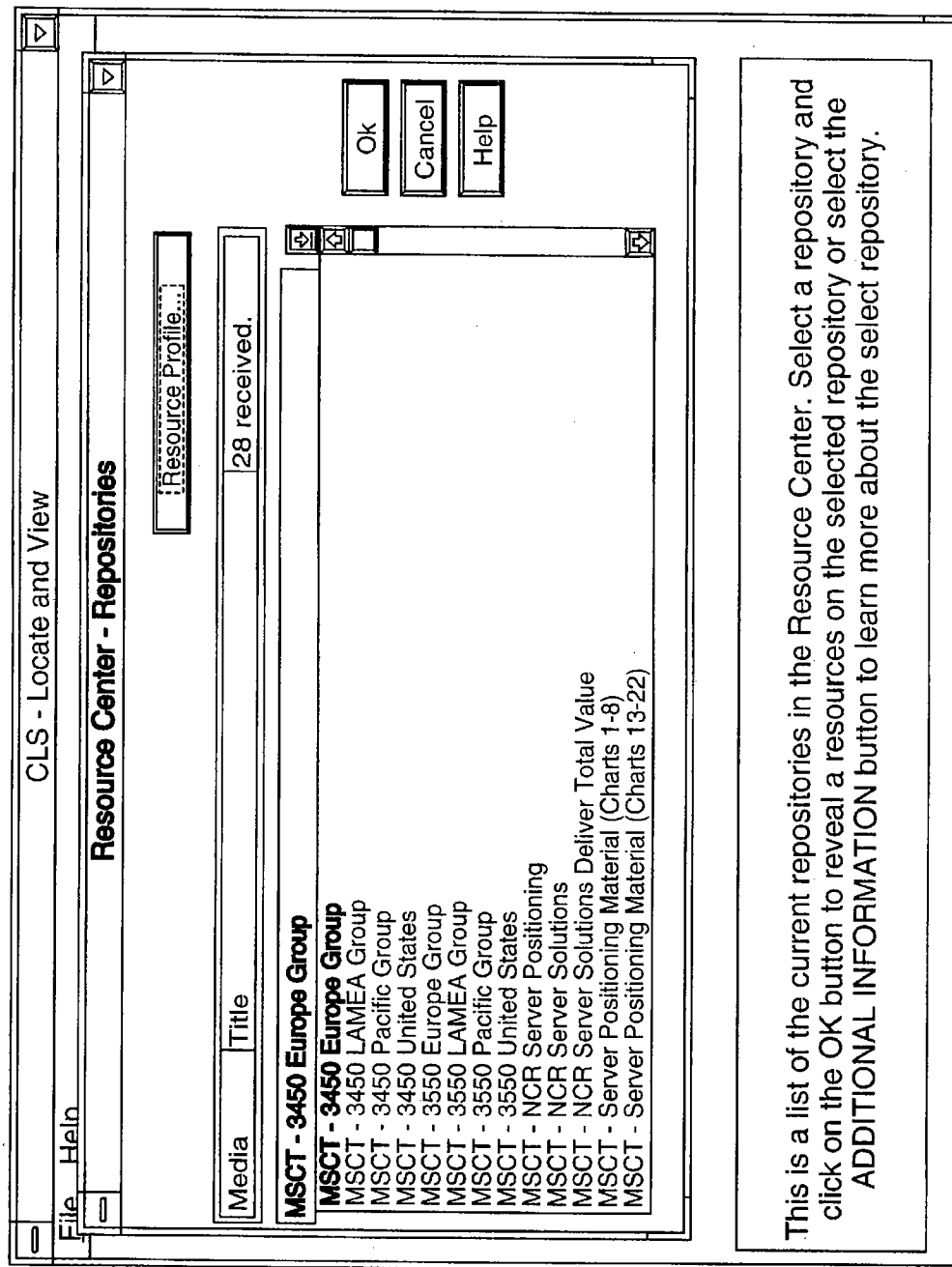
U.S. Patent

Nov. 12, 2002

Sheet 36 of 101

US 6,480,855 B1

FIG. 31



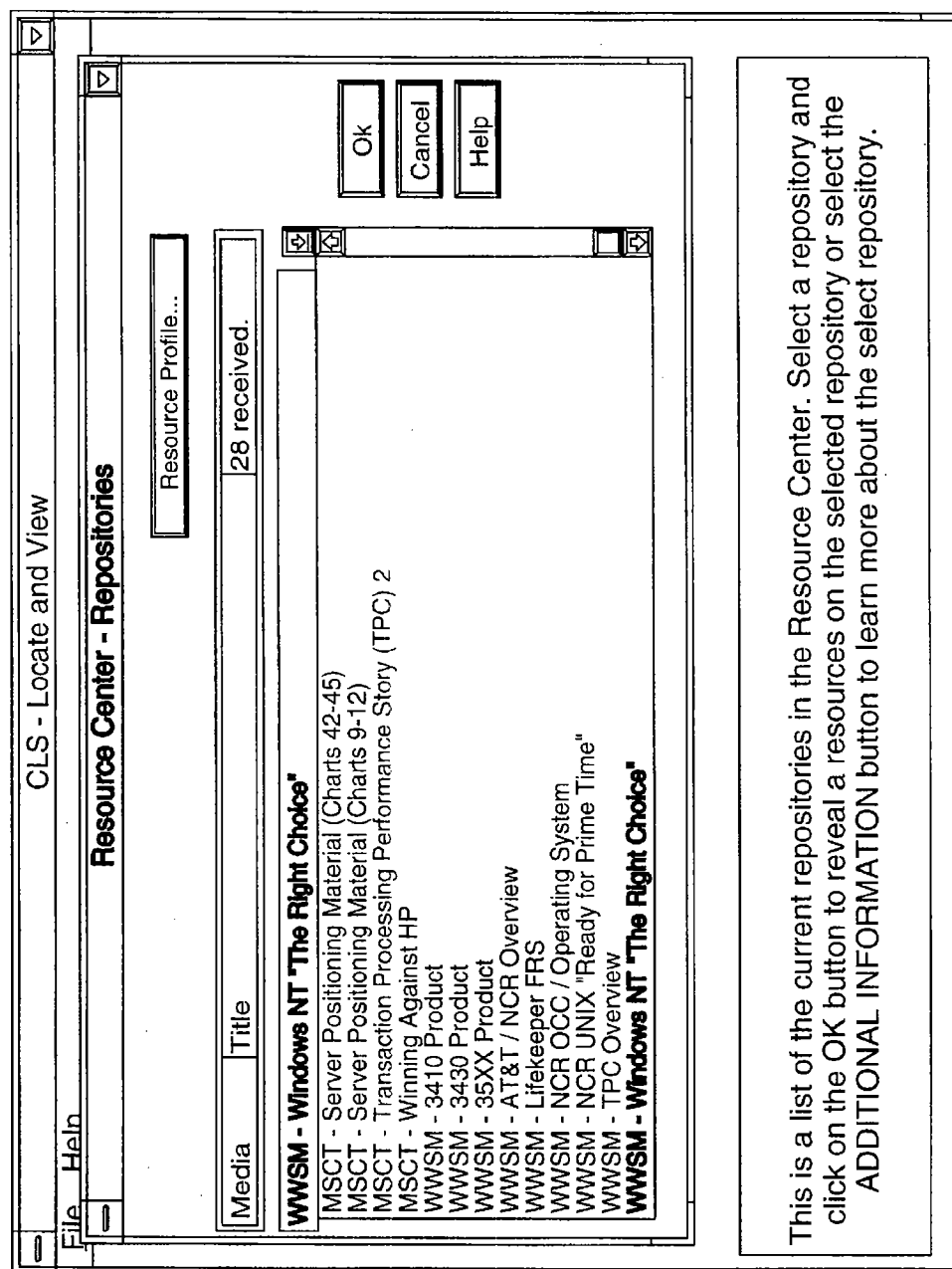
U.S. Patent

Nov. 12, 2002

Sheet 37 of 101

US 6,480,855 B1

FIG. 32



U.S. Patent

Nov. 12, 2002

Sheet 38 of 101

US 6,480,855 B1

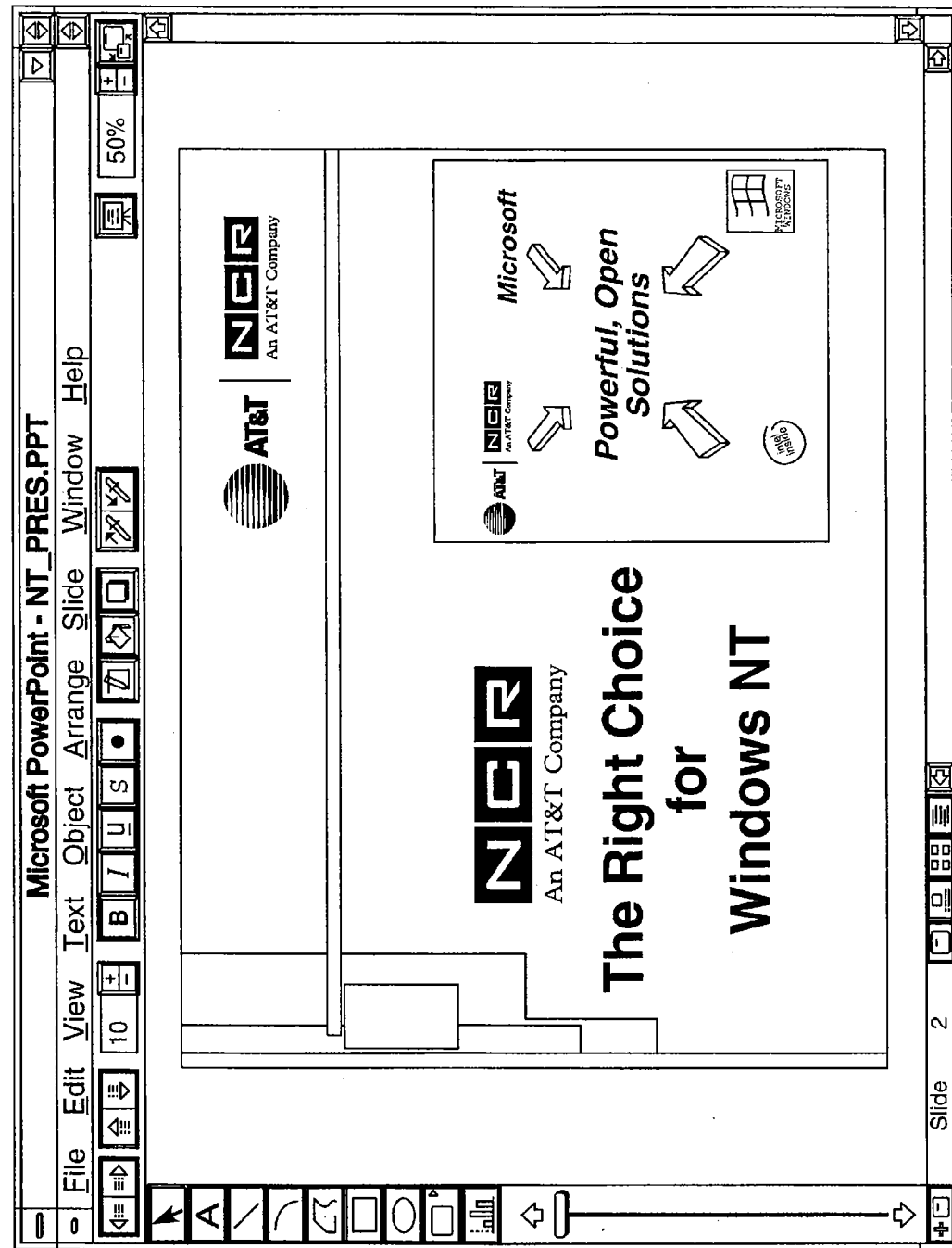


FIG. 33

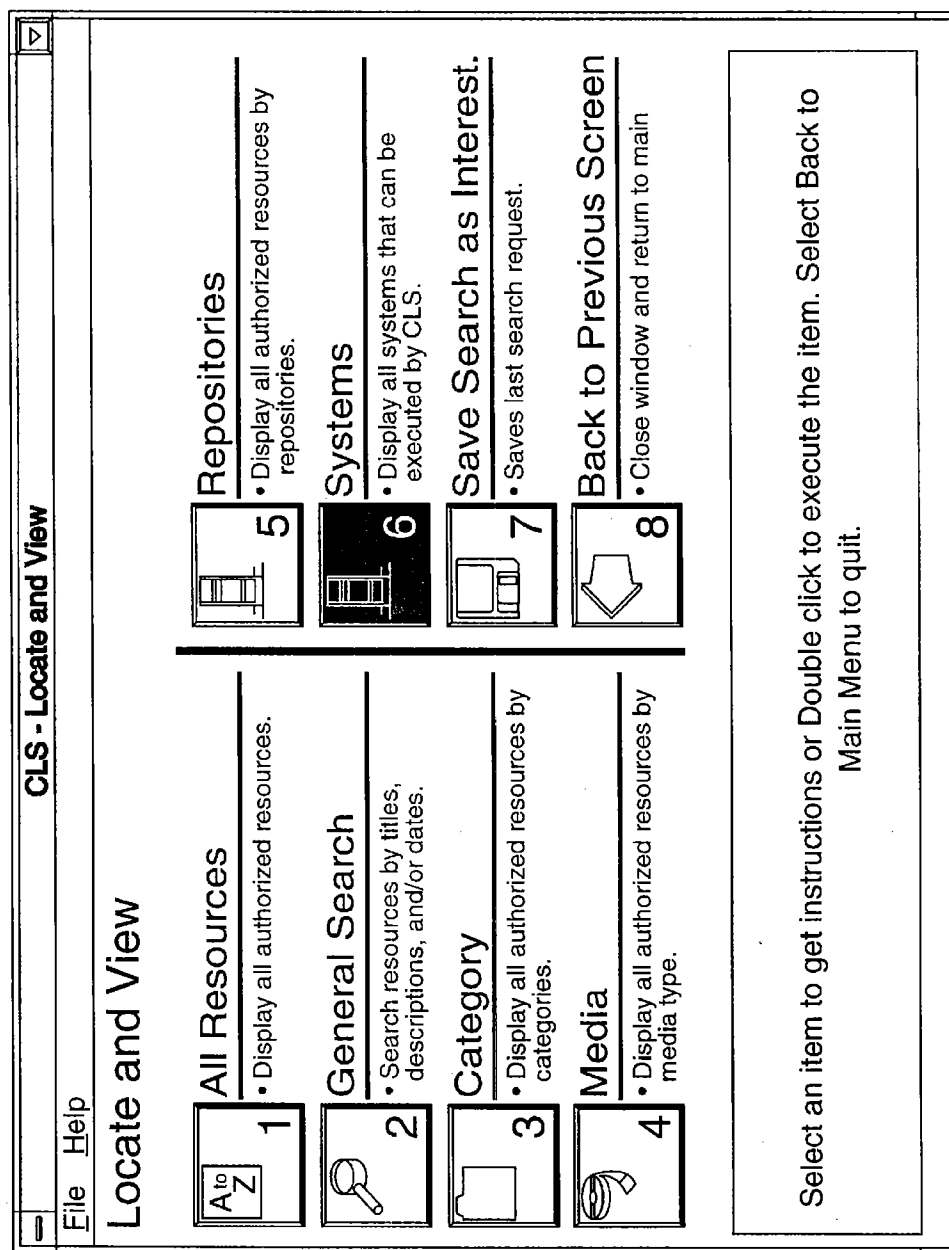
U.S. Patent

Nov. 12, 2002

Sheet 39 of 101

US 6,480,855 B1

FIG. 34

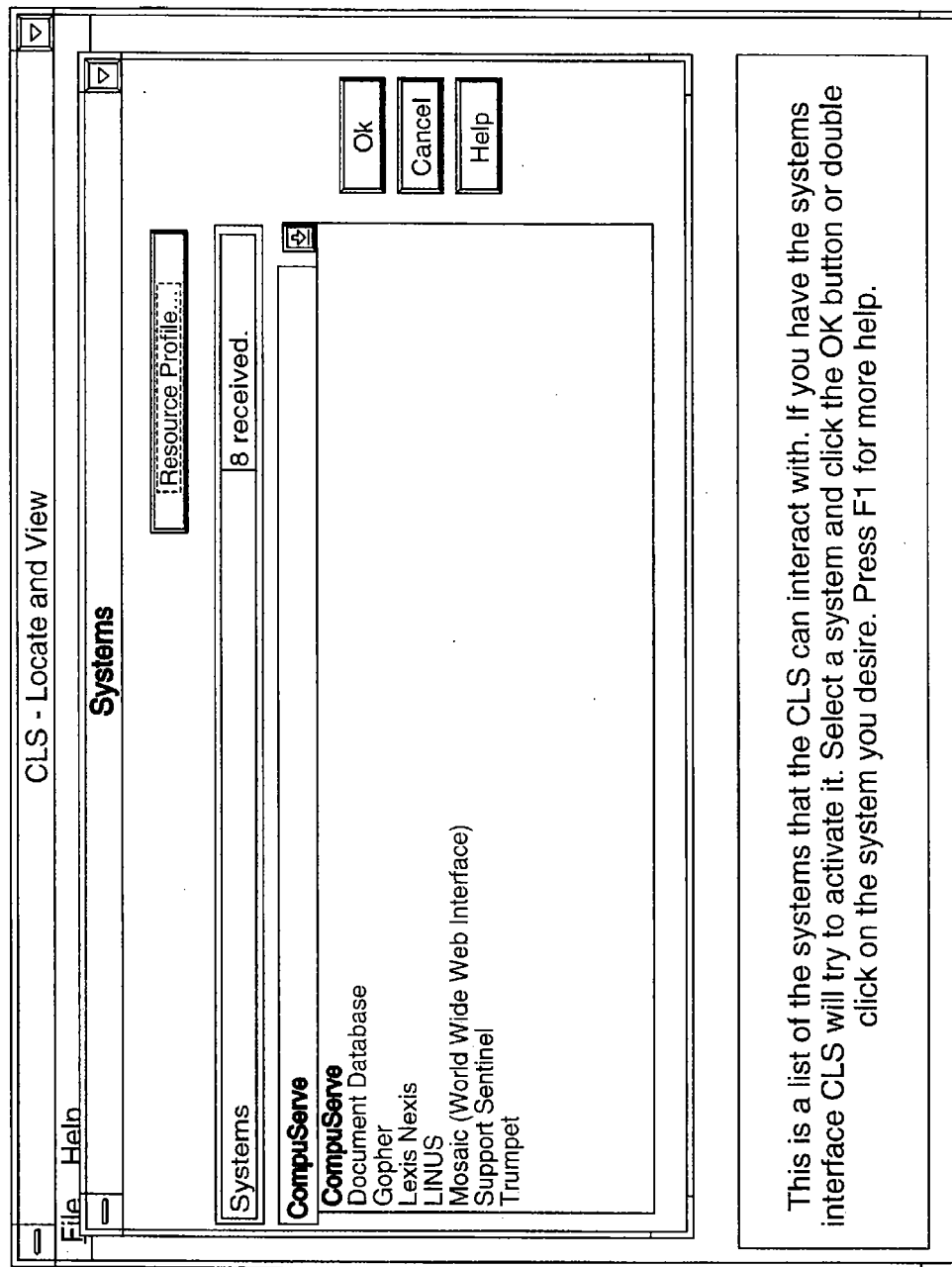


U.S. Patent

Nov. 12, 2002

Sheet 40 of 101

US 6,480,855 B1

FIG. 35

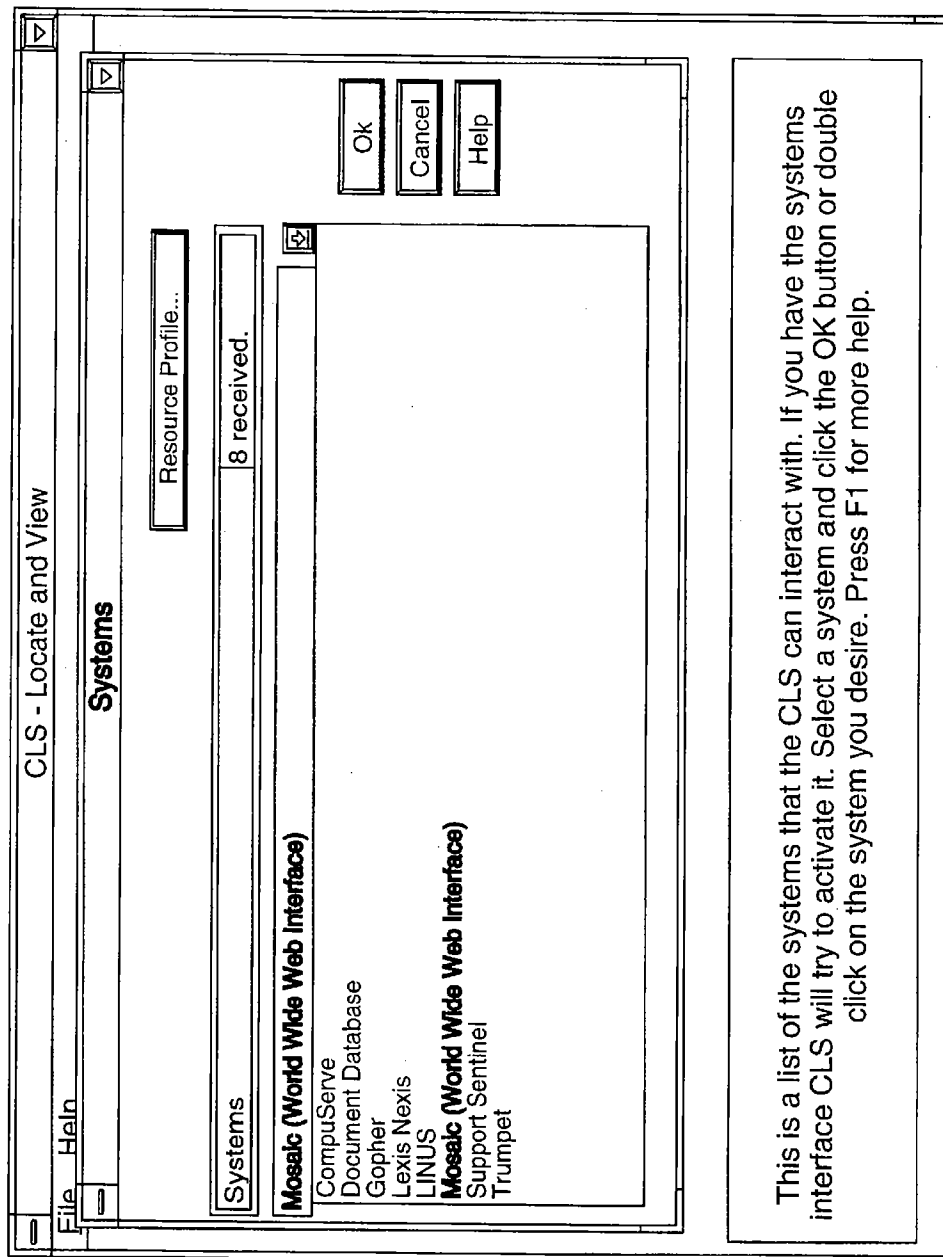
U.S. Patent

Nov. 12, 2002

Sheet 41 of 101

US 6,480,855 B1

FIG. 36



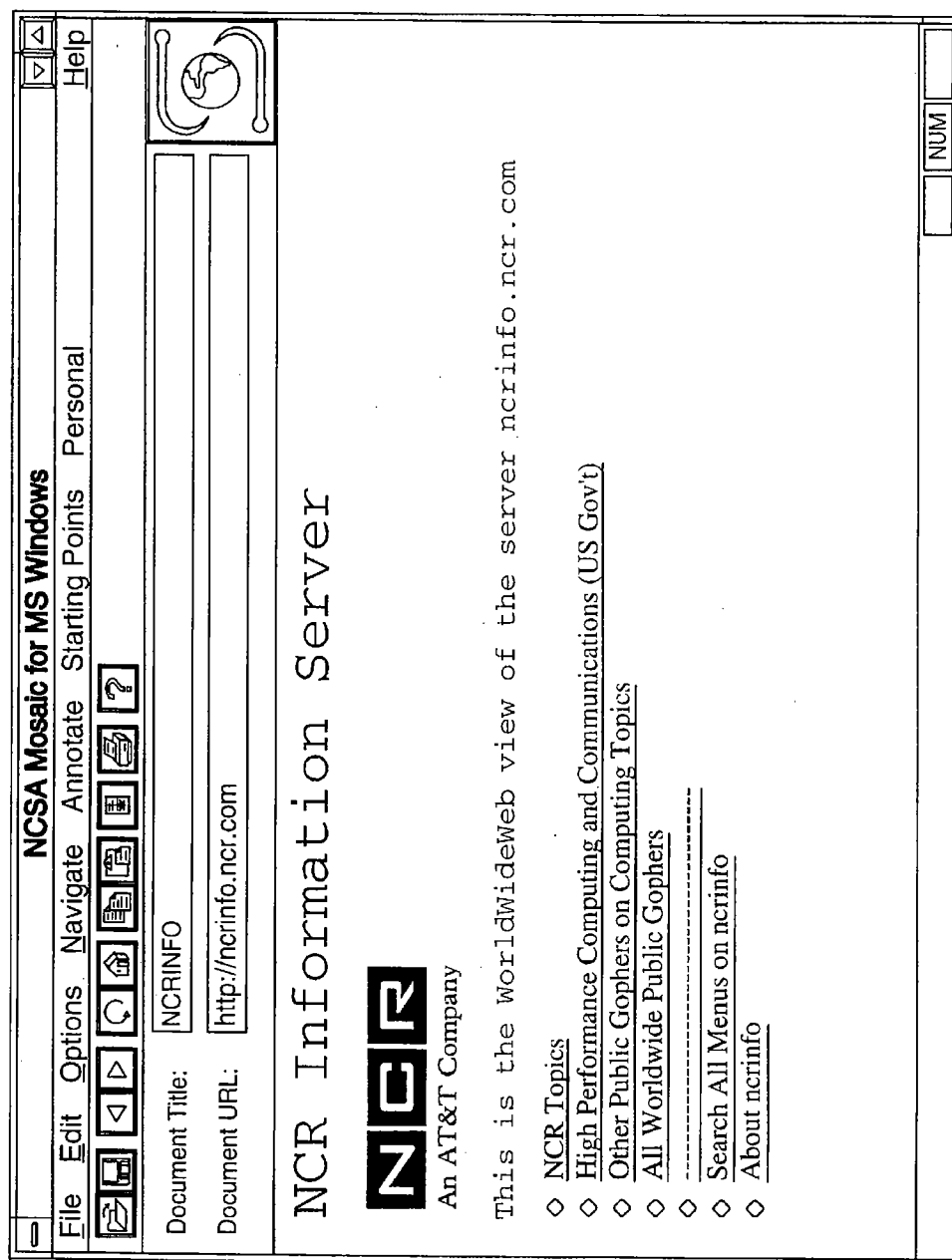
U.S. Patent

Nov. 12, 2002

Sheet 42 of 101

US 6,480,855 B1

FIG. 37



U.S. Patent

Nov. 12, 2002

Sheet 43 of 101

US 6,480,855 B1

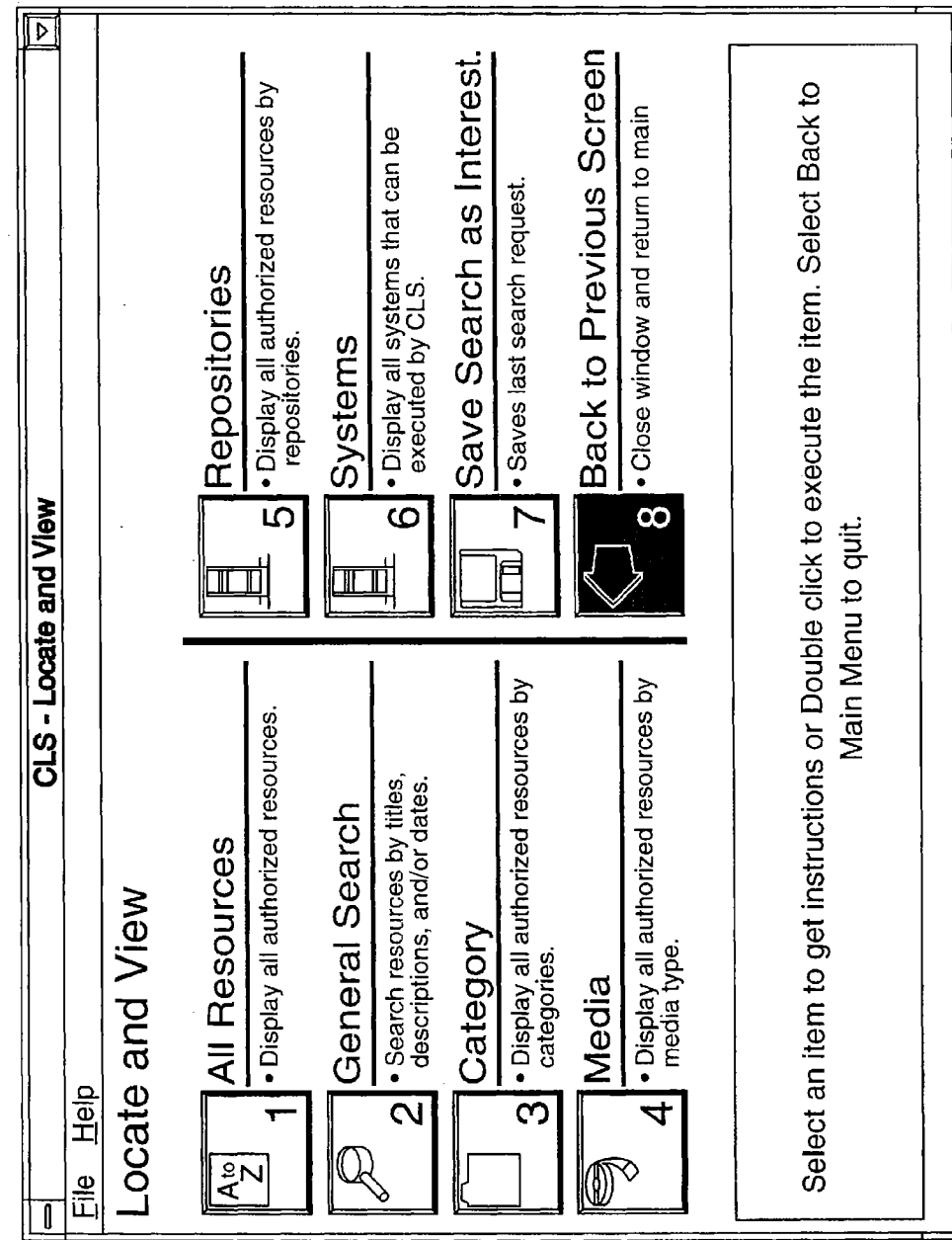
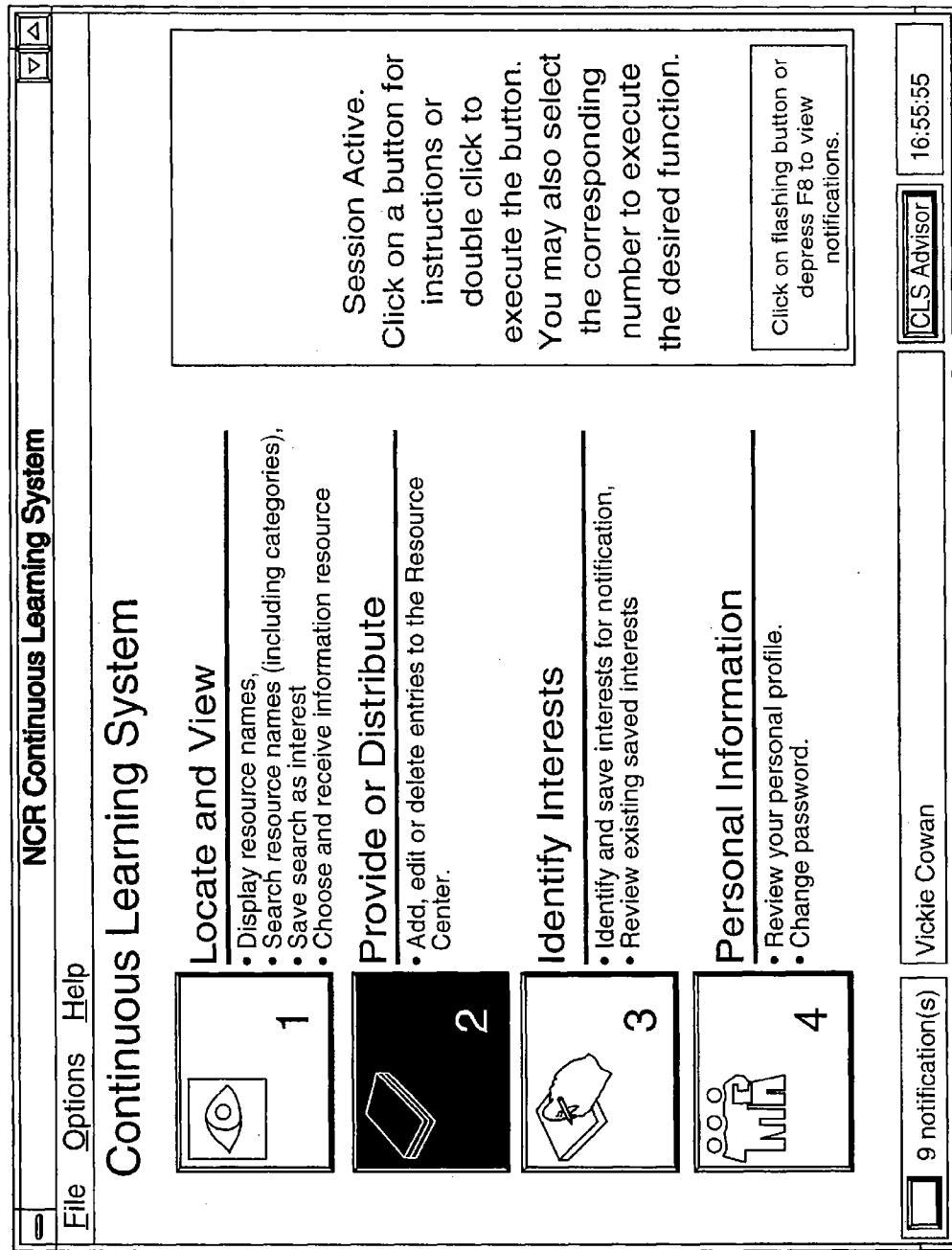


FIG. 39



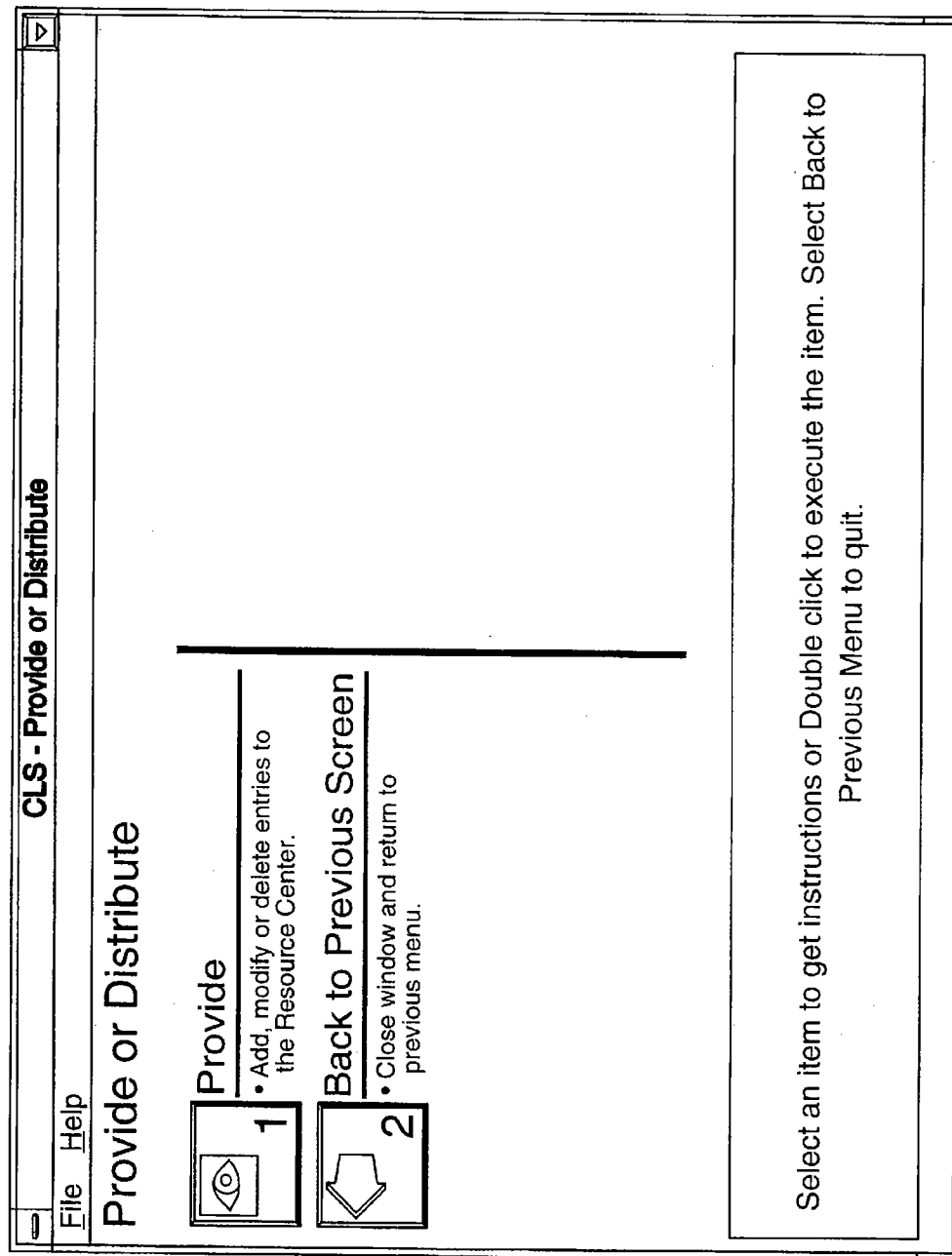
U.S. Patent

Nov. 12, 2002

Sheet 45 of 101

US 6,480,855 B1

FIG. 40



U.S. Patent

Nov. 12, 2002

Sheet 46 of 101

US 6,480,855 B1

FIG. 41

Resource Administration

File Help

Access Level: ☐ Public ☐ Organization ☐ Team

Resource Title:

Date Added: Date Updated: / /

Product ID: Media:

Cost: Format:

Price: Point of Contact:

Information Category: Alternate Administrator:

Information Filename:

Repository:

Resource Description:

Remarks:

Please select either New, Modify or Cancel.

U.S. Patent

Nov. 12, 2002

Sheet 47 of 101

US 6,480,855 B1

FIG. 42

Resource Administration

File Help

Access Level: ☐ Public ☐ IPD only ☐ Team

Resource Title:

Date Added: / / Date Updated: / /

Product ID:

Cost:

Price:

Information Category:

Information Filename:

Repository:

Resource Description:

Remarks:

Media:

Format:

Point of Contact:

Alternate Administrator:

Bitmap>>

Customer Marketing Product Supplier Technology Other Partnership

Ok Cancel New Modify Delete Clear All Help

Please enter new data at this time and click on OK.

U.S. Patent

Nov. 12, 2002

Sheet 48 of 101

US 6,480,855 B1

FIG. 43

Resource Administration

File Help

Access Level: ☐ Public ☐ IPD only ☐ Team

Resource Title:

Date Added: Date Updated: / /

Product ID:

Cost:

Price:

Information Category:

Information Filename:

Repository:

Resource Description:

Remarks:

Media:

Format:

Point of Contact:

Alternate Administrator:

Product

Supplier

Technology

Other

Partnership

CORE IP

CLS-TEAM NOTES

Bitmap>>

Ok Cancel New Modify Delete Clear All Help

Please enter new data at this time and click on OK.

U.S. Patent

Nov. 12, 2002

Sheet 49 of 101

US 6,480,855 B1

FIG. 44

Resource Administration

File Help

Access Level: ☐ Public ☐ IPD only ☐ Team

Resource Title:

Date Added: Date Updated: / /

Product ID:

Cost:

Price:

Information Category:

Information Filename:

Repository:

Resource Description:

Remarks:

Please enter new data at this time and click on OK.

U.S. Patent

Nov. 12, 2002

Sheet 50 of 101

US 6,480,855 B1

FIG. 45

The screenshot shows a window titled "Resource Administration". At the top left is a menu bar with "File" and "Help". Below the menu bar, on the left, are three checkboxes: "Public", "IPD only", and "Team". The main area contains several labeled input fields: "Resource Title:", "Date Added:" (with a date picker showing "/ /"), "Product ID:", "Cost:", "Price:", "Information Category:" (with a dropdown arrow), "Information Filename:", "Repository:", "Resource Description:", and "Remarks:". To the right of these fields are several buttons: "Ok", "Cancel", "New", "Modify", "Delete", "Clear All", and "Help". There are also some smaller buttons with icons (like a magnifying glass) next to some fields. At the bottom right, there is a rounded rectangular button that says "Please enter new data at this time and click on OK.".

U.S. Patent

Nov. 12, 2002

Sheet 51 of 101

US 6,480,855 B1

FIG. 46

Resource Administration

File Help

Access Level: ☐ Public ☐ IPD only ☐ Team

Resource Title:

Date Added:

Product ID:

Cost:

Price:

Information Category:

Information Filename:

Repository:

Resource Description:

Remarks:

Please enter new data at this time and click on OK.

Filename: File size: 0

Current Directory: C:\CLN\UPDATE

Dir List:

- ☐ [-a-]
- ☐ [-c-]
- ☐ [-m-]
- ☐ [-p-]
- ☐ [-s-]
- ☐ [..]

File List:

- cat.ico
- catatoz.ico
- clnsign.obr
- clnsign1.obr
- cls.ini
- clshelp.hlp
- clsnew.zip
- clsxfr.bat
- clsxfr.pif

Buttons: Ok Cancel New Modify Delete Clear All Help

Buttons: Edit... OK Cancel

U.S. Patent

Nov. 12, 2002

Sheet 52 of 101

US 6,480,855 B1

FIG. 47

Resource Administration

File Help

Access Level: ☐ Public ☐ IPD only ☐ Team

Resource Title:

Date Added:

Product ID:

Cost:

Price:

Information Category:

Information Filename:

Repository:

Resource Description:

Remarks:

Please enter new data at this time and click on OK.

Filename: File size:

Current Directory:

Dir List:

Filenames:

Edit... OK Cancel

Ok Cancel New Modify Delete Clear All Help